1988 IUCN Red List of Threatened Animals



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1988 IUCN RED LIST OF THREATENED ANIMALS

IUCN

IUCN (International Union for Conservation of Nature and Natural Resources) is a membership organisation comprising governments, non-governmental organisations (NGOs), research institutions, and conservation agencies, whose objective is to promote and encourage the protection and sustainable use of living resources.

Founded in 1948, IUCN has nearly 600 members representing 116 countries. Its six Commissions comprise a global network of experts on threatened species, protected areas, ecology, environmental planning, environmental law, and environmental education. Its thematic programmes include tropical forests, wetlands, marine ecosystems, plants, oceanic islands, the Sahel, Antarctica, and population and sustainable development.

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The Conservation Monitoring Centre (CMC) is the division of IUCN that provides an information service to the Union, its members, and the conservation and development communities. CMC has developed an integrated and cross-referenced global database on animals, plants and habitats of conservation concern, on protected areas throughout the world, and on the international trade in wildlife species and products. CMC produces a wide variety of specialist outputs and reports based on the analysis of this data, including such major publications as the Red Data Books and Protected Areas Directories, which are now recognised as the authoritative reference works in their field.

Other IUCN Centres focus on Environmental Law, and Conservation for Development. Collectively, this information and expertise is used to assist IUCN and its members to develop conservation policy and implement programmes, and to promote a greater awareness of the need for sound conservation practice by the international development community.

Should you wish to consult these services please contact:

IUCN Secretariat, World Conservation Centre Avenue du Mont-Blanc, CH-1196 Gland, Switzerland

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Prepared by

The IUCN Conservation Monitoring Centre Cambridge U.K.

In association with the International Council for Bird Preservation

With the support of the **David Shepherd Charitable Foundation**

Guest Essay by

Dr Bruce Wilcox Director, Center for Conservation Biology Stanford University, California

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PREAMBLE

The activities of the Species Survival Commission (SSC) and the Conservation Monitoring Centre (CMC) can be judged by their success in terms of species saved from extinction.

As we all know, there are many success stories that we can point to, but the sad reality is that we are still losing species every day as the relentless pressure from humankind continues.

If we do not develop a successful model in which population is stabilised we are all working in vain. Sustainable natural resources are limited, a message that we must ensure is fully understood.

Once one realises that between the covers of this deceptively slim volume we only have listed those species where we know the actual situation in the "wild", can one understand the possible stress and potential threat the majority of unlisted species - because of our lack of knowledge - are subjected to.

The aims for both the Species Survival Commission and the Conservation Monitoring Centre must be to obtain action for these listed species, which is where the forthoming SSC Action Plans play their role and, equally vitally, to ensure the steady build up and maintenance of the database for all the "conservationally" unknown species which we need to include in our concerns.

It is good to see this new 1988 edition of the IUCN Red List of Threatened Animals, and to thank the David Shepherd Charitable Foundation for their financial support in ensuring its publication. The hard work of all the CMC team carried out quietly and often under great financial stringency is again well rewarded in the quality of the publication.

Gren Ll. Lucas

Chairman, IUCN Species Survival Commission

7 December 1987

INTRODUCTION

The IUCN Red List of Threatened Animals is an index of those animal species known to IUCN to be threatened with extinction. It complements the IUCN Red Data Book series, which contains detailed information on the status of species and of the measures needed to conserve them. Such information provides the essential first step in the development of action plans to conserve species, and in the development of priorities for scarce conservation funds. It also provides an information source for scientists, educationalists, zoos, the media and the general public, and is an important tool for the implementation of international wildlife treaties such as the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the Bonn Migratory Species Convention, and the Convention on the Conservation of European Wildlife and Natural Habitats.

Conservation data held on individual species can be analysed to determine sites of special conservation concern, to determine the percentage of species known to occur in protected areas and those for which habitat protection is still non-existent, and those requiring legal protection. Such analyses in turn stimulate conservation activities, the results of which are then fed back into the data system to determine new conservation priorities. The IUCN Conservation Monitoring Centre in collaboration with IUCN's Species Survival Commission and the International Council for Bird Preservation (ICBP) are maintaining and developing this important data base on the status of the world's species as an essential component of their conservation programmes.

IUCN's threatened species list is compiled and maintained by the IUCN Conservation Monitoring Centre with assistance from the International Council for Bird Preservation. It is published periodically. For each threatened taxon, the list provides the scientific name, English vernacular name (where known), IUCN category (for definitions see page xvii), and a brief description of the animal's distribution. This is followed by an index to the list based on the order, family and generic listing. Vernacular names for major groupings such as monkeys, parrots, and butterflies are also included.

Data upon which the listings are made are gathered from literature searches and from correspondence with specialists around the world, including those belonging to the Specialist Groups of IUCN's Species Survival Commission and the International Council for Bird Preservation. The majority of vertebrate listings are based on the IUCN Red Data Books and recommendations and documentation provided by IUCN and ICBP. For invertebrates, however, it must be stressed that the list is only provisional, since most species have not yet been subjected to the same review process as has been carried out for the vertebrate groups, apart from those listed in the IUCN Invertebrate Red Data Book and the Swallowtail Butterfly Red Data Book. Other invertebrate listings have been taken from correspondence and a number of published sources (noted on page xv).

The number of threatened animal taxa identified by IUCN is 4589, comprised of 555 mammals, 1073 birds, 186 reptiles, 54 amphibians, 596 fishes, and 2125 invertebrates. However, except for birds, for which ICBP/IUCN have now attempted a global review, these numbers represent only those taxa whose threatened status is known to IUCN; many, many more taxa, particularly invertebrates, are threatened, and becoming extinct every year undescribed and unknown to the scientific and conservation communities. Thus the number of threatened taxa identified by IUCN represents only the visible fraction of a much greater problem. The magnitude of this problem is discussed in detail by Bruce Wilcox in the "Guest Essay" included in this volume (page v).

The IUCN threatened species list is constantly under review; as new areas or taxonomic groups are surveyed, species may be listed or delisted or categories may change, for example, the status of sea turtle species is currently under review. Since it is not possible for all parts of the list to be reviewed simultaneously it is inevitable that some parts of the list are more up-to-date than others.

The need for new information is continuous and assistance in providing accurate data always welcome. An inventory report form is detailed on page xi and is a guide to the information required by IUCN and ICBP to assess the international conservation status of a species.

The present list undoubtedly includes a number of errors and omissions, but it is to be hoped that these will stimulate people to send new information to:

The Species Conservation Monitoring Unit IUCN Conservation Monitoring Centre 219c Huntingdon Road Cambridge CB3 ODL United Kingdom

GUEST ESSAY

TROPICAL DEFORESTATION AND EXTINCTION

Bruce A. Wilcox

We are entering a period of Earth's history when the global environment is changing on a scale and with an intensity that has occurred only a few times during the nearly four billion-year span of the existence of life on Earth. In the past, such changes were trought about by, for example, gradual tectonic movements in which entire continents repeatedly divided and coalesced, effecting global geographical and climatic conditions. Such changes are credited with the mass extinction of the world's shallow water marine organisms at the end of the Permian. Environmental changes also on a similar scale, but more abrupt, may have been precipitated by the impact of asteroids. One such event, producing a natural "nuclear winter," is postulated to have caused the extinction of the dinosaurs along with many lesser known organisms at the end of the Cretaceous. The present period of change, however, which will undoubtedly warrant its own geological epithet by future geologists, is being brought about neither by uncontrollable nor distant terrestrial or extraterrestrial forces, but by us.

This change is the result of the cumulative effects of over five billion human beings making a living on a planet of finite size and resources. As a consequence, particularly after a few hundred thousand years of cultural and technological advances, virtually all other forms of life are either being killed outright, slowly poisoned, or are being squeezed into smaller and smaller corners of the world – "protected areas" that are either purposely set aside, economically undesirable, inaccessible, or some combination of these.

To just grasp the dimensions of the environmental events that are unfolding, and their potential consequences, is perhaps well beyond our capacity. Yet at least some attempt to comprehend the causes and consequences is imperative if we are to avoid leaving a legacy of biotic annihilation that will outlast our own species.

But how does one measure and assess the long-term impacts of such changes as those apparently occurring on the level of global atmospheric fluxes of carbon dioxide and ozone? What about the "megaharvesting" of whales or of their resource base, krill, in the world's oceans, and the impact on the world's marine ecosystems? And, how about the capacity of both the marine and terrestrial ecosystems to absorb toxic wastes of every possible description? Finally, what about the wholesale destruction of entire ecosystems such as tropical forests and the impact on the vast number of species they support?

By all indications, each of these changes will seriously impact Earth's biota, and some may even precipitate another episode of mass extinction. The effects of one of them, destruction of the world's tropical forests, specifically has been so implicated. As their destruction is so obviously apparent and there richness so great, the consequences, as measured by the loss of thousands or millions of species in the foreseeable future is at least potentially comprehensible. A detailed look at tropical moist forests, their rate of destruction and disturbance, and how this may contribute to the global rate of endangerment and extinction, gives at least one measure of the magnitude of the current global environmental change taking place.

Broadly speaking, tropical forests include all forest formations in the tropical regions of the world, some of which are ecologically and structurally temperate. Excepting these, forests of the warm and at least seasonally humid environments still comprise an extremely heterogeneous group, including both dry and moist forests. The latter ranges from seasonally wet "monsoon forest" to true, more or less continuously wet "rain forest," which together constitute "tropical moist forest." Even these designations are insufficient and often generate confusion, some of which can be avoided by limiting general discussion of the statistics of forest disturbance to "closed broadleaved tropical forest" as designated by FAO. These, include all but a few percent of the total tropical moist cover in the world. The extent, rates, and kinds of disturbance of tropical forests have been most recently examined in detail by FAO (Lanly 1982).

On the IUCN Biogeographic Provinces map developed by Udvardy (1975) tropical moist forest (TMF) generally relates to those provinces labelled "tropical rain forest" and "tropical monsoon forest" as well as many of those labelled "tropical mixed island systems" and "tropical montane provinces with complex zonation." In theory, these once may have covered about 1600 million hectares, an amount thought to have existed prior to their extensive alteration by humans. By the mid-1970's TMF is estimated to have been reduced to approximately 1000 million hectares of intact ("primary") forest. About 400 million hectares had been "transformed" in roughly equal amounts to logged forest or shifting cultivation, and the remainder entirely lost (permanently cleared) for agriculture, grazing lands, various kinds of plantations, and other land uses.

The distinction between primary forest, disturbed forest (logged or that in shifting cultivation), and permanently cleared is critical to assessing the long-term consequences of deforestation or disturbance for two reasons. First, disturbance will not necessarily result in extinction, particularly if it is light and primary forest remains nearby. Second, given enough time, disturbed forest can regenerate and become primary forest. Unfortunately, at the present time not only is primary forest being permanently cleared, but a large fraction of that which is initially disturbed temporarily for logging or shifting cultivation is subsequently being permanently cleared. In addition, a significant fraction of the forest in the shifting cultivation cycle is effectively cleared permanently due to shortening the fallow period and exhaustion of the soil.

Key to projecting disturbance and loss of forest into the future, and in turn, endangerment and extinction of species, are estimates of the rates of transition from one category to the next. We must know, for example, the amount of primary forest transformed annually to logged forest, the amount of logged forest permanently cleared, etc. Thus, the total rate of loss or disturbance of forest and the amount in each category is computed by adding the rates of these different pathways. Rough estimates of these transition rates are provided by the FAO, filling in some of the gaps with figures reported in a study by the U. S. National Academy of Sciences (Myers 1980). Although in theory the pathways are bidirectional, increases in forest cover which counter the global trend of TMF destruction can be disregarded. The amount of increase due to regeneration or reforestation is insignificant compared to the current rates of disturbance and clearing.

The estimated worldwide rate of disturbance of primary forest and the rate of clearance of previously disturbed forest are both just under one percent annually. This does not include forest which is permanently lost directly from clearing of primary forest, or that left permanently unproductive due to over-cultivation of forest in shifting cultivation, fuelwood gathering, and numerous other factors affecting already disturbed forest that are difficult to monitor. The actual rate of permanent clearing is probably a little over one percent and combining disturbance and clearing, could be over two percent annually. This means that all TMF potentially could be disturbed or cleared in 50 years.

In fact, conservative estimates of the absolute annual amounts of forest conversion for the period from 1976 to 1980, for example, indicate that of the approximately 1200 million hectares of forest standing (primary or logged) in 1976, a minimum of 200 million hectares will have been cleared, and another 200 million will have been disturbed, by the turn of the century. This does not take into consideration the probable linkage of these rates to population growth, which is projected to continue in the tropical developing countries well into the middle of the next century. Thus, easily one-third of the forest remaining at the beginning of the last quarter of this century will have been disturbed or destroyed by the end of the century – just 12 years from now. Attempting predictions of global TMF losses beyond this is highly problematic and is quite academic at this point.

Deforestation is not of course equally distributed throughout the tropics. A number of areas are being disturbed so rapidly that virtually no undisturbed forest will remain outside the relatively few protected areas within the next few years. These so-called "hotspots" of deforestation include the moist forests of the Brazilian Atlantic coast, Columbian and Ecuadorian coasts, and those of Mexico, Central America, Australia, Indonesia, Indochina, Sri Lanka, Philippines, East and West Africa, and Madagascar.

Most of these forests will be completely disturbed in less than thirty years, and some, particularly in Central America and West Africa, are already virtually gone. The only significant blocks of relatively undisturbed forest that will be left by the middle of the next century will be in the Amazon and Zaire Basins and in northern South America (Guyana and Surinam).

Certainly, an assault of this magnitude will have profound consequences to the global pool of species, not to mention the effects on Earth's atmosphere and climate. There have been several attempts to estimate the rate of species extinction resulting from tropical deforestation. Because of the crudeness of such estimates, resulting not from ineptness but our ignorance of certain factors, these have met with everything from skepticism to outright hostility. In an attempt to produce at least a reasonably defensible assessment of the severity of the problem, several colleagues and I have been examining the approaches to making such estimates. Our goal is to at least identify the major impediments to obtaining a better assessment of the situation, if not to at least produce estimates to which levels of confidence can be attached.

The first serious impediment to estimating rates of species extinction is not knowing how many species there are in either tropical forests, or in the world as a whole. To begin with, something over 1.7 million species have been scientifically described. About 1.5 million of these are from the temperate regions, immediately suggesting that the tropics are extremely under represented due to the relative paucity of tropical collections and taxonomists working on them. We can guess at how under represented they are by looking at those groups that are relatively well studied in both regions, such as birds, mammals, and plants. In these taxa, about twice as many species occur in the tropics than temperate regions. Assuming that this ratio is constant among all taxa, there must be at least 3 million species in the tropics alone. The consensus among systematists therefore is that are at least 3 to 5 million species in the world. Add to this, however, the consideration that perhaps only half of the species that exist in the temperate and marine habitats have been discovered and described, and the number could be closer to 10 million.

It is doubtful, however, that the 2 to 1 ratio holds for all taxa. Invertebrates in particular, which constitute more than 95% of all described species, are generally thought to be especially rich in tropical forests. Butterflies, for example, the only major insect taxa that can be considered sufficiently well known to allow a tropical-temperate comparison suggest the ratio might be closer to 10 to 1. Thus, could there be 30 million species in the tropics? This is in fact the precise number recently estimated for insects alone in tropical moist forests based on studies of the canopy insect faunas in the Neotropics (Erwin 1982). This upward revision of the number of species in the world by ten-fold certainly is unsettling and further illustrates the difficulty in estimating global extinction rates.

There are at least two additional major problems in translating projected rates of forest disturbance and clearing into rates of endangerment and extinction. The first is figuring out what proportion of the tropical forest biota is unaffected by disturbance versus that which is affected. The second is relating the amount of forest affected by disturbance or clearing to species endangerment or extinction. These are both extremely complex problems that cannot be merely waved away. They represent perhaps the most significant technical challenges to protecting tropical diversity.

I shall not attempt to address the first problem except very briefly. The few existing studies relevant to the topic indicate that the effects of disturbance can range from virtually none to massive local reductions in species richness. For example, careful selective logging can leave the species composition of forest completely intact. On the other hand, intensive shifting cultivation, in which no primary forest remains in the vicinity, may literally decimate the biota of a forest.

The second problem is solved in theory by employing the "species-area relationship." This model, which is the mainstay of island biogeography, is best described for insular systems by "Darlington's rule" which states that reduction in the size of an area by a factor of ten, reduces the number of species by two. Applying the estimates of the amount of forest remaining by the year 2000, whether primary or disturbed, to this model (in its algebraic form) suggests that six or seven percent of all TMF species in the world are at risk and about three or four percent will be extinguished outright. Adding disturbance might contribute a few more percent to these categories.

As with all ecological models, which of course are always mere abstractions of nature, application of the species-area relationship entails certain critical assumptions. In this case the critical assumption is that species richness or habitat loss, or both, are evenly distributed geographically. In fact, the tendency for smaller areas to support fewer species is only a general one; some areas are extremely rich while others are impoverished despite their size. The validity of the above prediction thus assumes that on average both rich as well as impoverished forests are cleared indiscriminately.

A way around this assumption, and in fact, avoiding the species-area model altogether, is simply to focus on biota within definable areas certain to be completely cleared or disturbed by a particular date. My colleagues and I have done this by effectively superimposing the distributions of bird and mammal species on areas within those "hotspots" listed above to determine which species' ranges are entirely encompassed. We went a step further and eliminated all but those species endemic to the region. The result indicates that about nine percent of the world's birds and mammals are at high risk. We cannot say what proportion will disappear because of the lack of more detailed data on the amount of forest remaining in different disturbed states, and what fraction of the avian and mammalian faunas are affected by each state. While certainly only a fraction of the nine percent will go extinct, this estimate is only for a limited area of the total TMF.

We can attempt yet one more approach to estimating global TMF endangerment and extinction, which can serve as an independent check. Raven (personal communication) estimates that about 120,000 species of flowering plants, out of a world total of 250,000, occur in TMF regions that are certain to be either entirely cleared or disturbed in the next thirty years -- essentially most of the same forest areas listed above. In fact, at least a third of these species occur in the forests of only three countries: Columbia, Ecuador, and Peru. Gentry (1986) reports the recent clearing of a single ridge top in western Ecuador that resulted in the disappearance of as many as ninety plant species known only from that location -- an event that is occurring repeatedly.

Raven further suggests that flowering plants constitute about 1 in 10 to 1 in 20 of all species, assuming there are 5 to 10 million. So if one also considers that regions of highest plant diversity tend also to reflect the highest species diversity in general, on the order of 2.4 to 4.8 million species occur in these areas. If one further assumes that all but ten percent of the forest area remains reasonably undisturbed, then, following Darlington's rule, and acknowledging the critical assumptions we are making in applying the species-area model, half of these species will ultimate go extinct. Refining the calculation to consider the fraction of species that are on average immediately affected, roughly 30% will disappear during this time, which amounts to three-quarters of a million species, or 15% to 30% of all species.

Taken together, the three different approaches for predicting rates of global TMF extinction indicate that at least several hundred vertebrates, hundreds of thousands of plants, and over a million species of insects are endangered and will go extinct within the next three to five decades.

The argument is frequently made that extinction is natural and, as Darwin pointed out, unless the numbers go on increasing indefinitely, we must assume that extinction occurs at a rate matching that of the appearance of new species. Darwin's point was of course with reference to evolutionary time. Fossil evidence in fact confirms that 99% of the species that ever existed are now extinct. Our venue is that of the span of an individual human lifetime, since in fact, the extinctions just described will take place while most us are still living.

Even the previous mass extinction episodes were spread out over a much longer time period, at least millenniums, but upwards of millions of years. Actually, the present onslaught may well have begun with the mass extinction of Pleistocene mammals followed by a second prehistoric wave of human-caused extinctions occurring on many of the world's islands.

Today, islands remain the historic centers of endangerment and extinction, where, for example over 90% of the recorded avian extinctions have occurred. Until the present, however, the recorded extinction rate for higher vertebrates has been kept at a respectable 151 species over the past 400 years. This compares to a background rate, based on fossil evidence, of about one species every 50 to 100 years. When the tropical moist forest tallies start coming in, the documented extinctions will undoubtedly take another order of magnitude jump over the historic rate. Tragically, however, for every species listed as endangered or extinct at least a hundred more will probably disappear unrecorded.

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INVENTORY REPORT FORM

Report to be mailed to: SCMU, IUCN Conservation Monitoring Centre 219(c) Huntingdon Rd, Cambridge, CB3 ODL, U.K.

- 1. Country
- 2. Date
- 3. Reporter

Name: Address:

4. Taxon

Scientific Name: Common Name:

5. Distribution

Present: Former:

If possible, please include a map. Is present range preferred or enforced habitat?

6. Population

Estimated numbers in the wild. Indicate date of estimate and describe method of estimation. Are numbers increasing, decreasing or stable?

7. Habitat and Ecology

Biome type. Elevation range. Brief notes about social structure, feeding habits and diet, reproduction (gestation, breeding season, number of young, age of sexual maturation), longevity etc.

8. Scientific interest and potential value

Use in scientific or medical research; commercial value in trade or local economy.

9. Threats to Survival

Eg. habitat destruction, over-exploitation, hybridization, natural disasters, competition for food.

10. Conservation Measures Taken

Legal measures (international conventions, national laws); is law enforced? Protected areas - does it occur in national parks, reserves etc.? If so, please list. Management programmes or research programmes in progress.

11. Conservation Measures Proposed

Same as for 10, but measures that are needed for the conservation of the taxon.

12. Captive Breeding

Numbers in captivity. Does it breed readily in captivity? Where and when?

13. Remarks

Reference citations for description of animal. Comments about related taxa. If the above information concerns a subspecies then brief information should be given about the distribution and status of the species as a whole. Special acknowledgements etc.

14. References

Can be published papers, unpublished manuscripts, or references to correspondence (cited as In litt.).

DOCUMENTS ON WHICH THE IUCN RED LIST IS BASED

In addition, recommendations and documentation for listings have been provided by the IUCN/SSC Specialist Groups, and by ICBP.

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IUCN THREATENED SPECIES CATEGORIES

Species identified as threatened by IUCN are assigned a category indicating the degree of threat. Definitions are as follows:

EXTINCT (Ex)

Species not definitely located in the wild during the past 50 years (criterion as used by the Convention on International Trade in Endangered Species of Wild Fauna and Flora).

N.B. On a few occasions, the category Ex? has been assigned; this denotes that it is virtually certain that the taxon has recently become extinct.

ENDANGERED (E)

Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating.

Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction. Also included are taxa that may be extinct but have definitely been seen in the wild in the past 50 years.

VULNERABLE (V)

Taxa believed likely to move into the 'Endangered' category in the near future if the causal factors continue operating.

Included are taxa of which most or all the populations are decreasing because of over-exploitation, extensive destruction of habitat or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security has not yet been assured; and taxa with populations that are still abundant but are under threat from severe adverse factors throughout their range.

N.B. In practice, 'Endangered' and 'Vulnerable' categories may include, temporarily, taxa whose populations are beginning to recover as a result of remedial action, but whose recovery is insufficient to justify their transfer to another category.

RARE (R)

Taxa with small world populations that are not at present 'Endangered' or 'Vulnerable', but are at risk.

These taxa are usually localised within restricted geographical areas or habitats or are thinly scattered over a more extensive range.

INDETERMINATE (I)

Taxa known to be 'Endangered', 'Vulnerable' or 'Rare' but where there is not enough information to say which of the three categories is appropriate.

INSUFFICIENTLY KNOWN (K)

Taxa that are *suspected* but not definitely known to belong to any of the above categories, because of lack of information.

K* Taxa which are currently under review by ICBP and which are likely to be designated a category in the near future.

THREATENED (T)

Threatened is a general term to denote species which are 'Endangered', 'Vulnerable', 'Rare', 'Indeterminate', or 'Insufficiently Known' and should not be confused with the use of the same term by the U.S. Office of Endangered Species. In this volume it is used to identify taxa comprised of several sub-taxa which have differing status categories.

COMMERCIALLY THREATENED (CT)

Taxa not currently threatened with extinction, but most or all of whose populations are threatened as a sustainable commercial resource, or will become so, unless their exploitation is regulated.

This category applies only to taxa whose populations are assumed to be relatively large.

N.B. In practise, this category has only been used for marine species of commercial importance that are being overfished in several parts of their ranges.

ABBREVIATIONS

Arch. Archipelago Equatorial Guinea Eq. Guinea F.R.G. Federal Republic of Germany I. Island Is Islands O. Ocean Unnamed species SD. U.A.E. United Arab Emirates U.K. United Kingdom United States of America U.S.A. U.S.S.R. Union of Soviet Socialist Republics Former Distribution [] An important, introduced population

1988 IUCN RED LIST OF THREATENED ANIMALS

MAMMALS

Phylum CHORDATA

Class MAMMALIA

V New Guinea	R Australia I Australia V New Guinea V Papua New Guinea R Papua New Guinea R Papua New Guinea Ex [Australia] R Australia Ex [Australia]	E Woodlark I.(Papua New Guinea) R New Guinea R Papua New Guinea R New Guinea	V Australia E Australia
Long-beaked Echidna	Burrowing Bettong Brush-tailed Bettong Desert Rat-kangaroo Doria's Tree-kangaroo Goodfellow's Tree-kangaroo Black Dorcopsis Wallaby Papuan Dorcopsis Central Hare-wallaby Rufous Hare-wallaby Banded Hare-wallaby Croscent Mailtail Wallaby Crescent Nailtail Wallaby Crescent Nailtail Wallaby Long-footed Potoroo Broad-faced Potoroo	Woodlark Island Cuscus Black-spotted Cuscus Cuscus Cuscus	Leadbeater's Possum Northern Hairy-nosed Wombat
Order MONOTREMATA Family Tachyglossidae Zaglossus bruijni	Order MARSUPIALIA Family Macropodidae Bettongia lesueur Bettongia penicillata Caloprynmus campestris Dendrolagus goodfellowi shawmayeri Dorcopsis atrata Dorcopsis atrata Dorcopsis unacleayi Lagorchestes asomatus Lagorchestes leporides Lagorchestes leporides Lagorchestes leporides Lagorchestes leporides Pagostrophus fasciatus Macropus greyi Onychogalea fraenata Onychogalea lunata Petrogale persephone Potorous longipes	Family Phalangeridae Phalanger lullulae Phalanger rufoniger Phalanger permixtio	Family Petauridae Gymnobelideus leadbeateri Family Vombatidae Lasiorhinus krefftii

[Australia] New Guinea Australia [Australia]	Australia [Australia]	Australia Australia Australia Australia	Australia	[Australia]	Cuba Hispaniola	Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar
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Pig-footed Bandicoot White-lipped Bandicoot Western Barred Bandicoot Desert Bandicoot	Greater Bilby Lesser Bilby	Dibbler Red-tailed Phascogale Julia Creek Dunnart Long-tailed Dunnart Sandhill Dunnart	Numbat	Thylacine	Cuban Solenodon Haitian Solenodon	Large-eared Tenrec Eastern Large-eared Tenrec Web-footed Tenrec
Family Peramelidae Chaeropus ecaudatus Echymipera clara Perameles bougainville	Family Thylacomyidae Macrotis lagotis Macrotis leucura	Family Dasyuridae Antechinus apicalis Phascogale calura Sminthopsis douglasi Sminthopsis longicaudata	Family Myrmecobiidae Myrmecobius fasciatus	Family Thylacinidae Thylacinus cynocephalus	Order INSECTIVORA Family Solenodontidae Solenodon cubanus Solenodon paradoxus	Family Tenrecidae Geogale aurita aurita Geogale aurita orientalis Limnogale mergulus Microgale brevicaudata Microgale crassipes Microgale longicaudata Microgale longicostris Microgale majori Microgale melanorrhachis

Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar	South Africa	Philippines	South Africa, Zimbabwe South Africa	U.S.S.R. France, Portugal, Spain	Ex [Panay I.(Philippines)] K. Mindanao (Philippines) K. E.New Guinea Ex? [Negros I.(Philippines)] K. Irian Jaya K. Sumatra K. Malaya, Borneo K. S.India
****	X K K K H K K K	>	2 2	>>	<u> </u>
	Gunning's Golden Mole Juliana's Golden Mole Duthie's Golden Mole Visagie's Golden Mole Giant Golden Mole Rough-haired Golden Mole De Winton's Golden Mole	Mindanao Gymnure	Maquassie Musk Shrew	Russian Desman Pyrenean Desman	Panay Giant Fruit Bat Chapman's Fruit Bat Lesser Naked-backed Fruit Bat Dayak Fruit Bat
Microgale parvula Microgale principula Microgale prolixicaudata Microgale sorella Microgale taiva Microgale thomasi	Family Chrysochloridae Amblysomus gunningi Amblysomus julianae Chlorotalpa duthiae Chrysospalax trevelyani Chrysospalax villosus Cryptochloris wintoni Cryptochloris zyli	Family Erinaceidae Podogymnura truei	Family Soricidae Crocidura maquassiensis Myosorex longicaudatus	Family Talpidae Desmana moschata Galemys pyrenaicus	Order CHIROPTERA Family Pteropodidae Acerodon lucifer Alionycteris paucidentata Aproteles bulmerai Dobsonia exoleta chapmani Dobsonia minor Dyacopterus brooksi Dyacopterus spadicens Latidens salimalii

Java Negros I. (Philippines) Luzon (Philippines) C.Caroline Is Comoro Is New Guinea, Aru Is Mariana Is, Palau Is, Caroline Is, Ryukyu Is (Japan) E.Caroline Is Mauritius Truck Is (C.Caroline Is) [Palau I.] Rodrigues Samoa, Fiji Is Aldabra I. (Seychelles) [Mauritius, Reunion] [Guam] N.E.New Guinea, Samoa, Cook Is Pemba I.(Tanzania)	New Guinea Seram I., New Guinea, Solomons Seychelles Thailand	Biak I.(Irian Jaya) Singapore, Pen. Malaysia, Sabah N.Australia S.U.S.A. to Guatemala S.U.S.A. to El Salvador
KHKKAHHKIKI KIHKKK	XXE X >	저 □ 첫 >>
Javan Tail-less Fruit Bat Philippines Tube-nosed Fruit Bat Carolines Flying Fox Comoro Black Flying Fox Big-eared Flying Fox Marianas Flying Fox Marianas Flying Fox Rodrigues Flying Fox Samoan Flying Fox Samoan Flying Fox Seychelles Flying Fox Guam Flying Fox Flying Fox Femba Flying Fox Femba Flying Fox	Greater Sheath-tailed Bat Raffray's Sheath-tailed Bat Seychelles Sheath-tailed Bat Kitti's Hog-nosed Bat	Geelvinck Bay Leaf-nosed Bat Ridley's Leaf-nosed Bat Orange Leaf-nosed Bat Mexican Long-nosed Bat
Megaerops kusnotoi Nyctimene rabori Otopteropus cartilagonodus Pteropus insularis Pteropus mariannus Pteropus mariannus Pteropus mariannus Pteropus molossinus Pteropus pilosus Pteropus samoensis Pteropus samoensis Pteropus subniger Pteropus subniger Pteropus subniger Pteropus subniger Pteropus tokudae Pteropus tokudae Pteropus tonganus	Family Emballonuridae Emballonura furax Emballonura raffrayana Coleura seychellensis Family Craseonycteridae Craseonycteris thonglongyai Family Megadermatidae Macroderma gigas	Family Hipposideridae Hipposideros papua Hipposideros ridleyi Rhinonicteris auranta Family Phyllostomidae Leptonycteris nivalis Leptonycteris yerbabuenae

Mammals		Java (Tanzania) Hawaii (U.S.A.) Java Europe,S.Asia Minor, N.W.Africa CU.S.A. N.W.Sumatra Curope to Ukraine U.S.A. U.S.A.		noro Is
Jamaica [Puerto Rico] Cuba, Hispaniola	Madagascar		[New Zealand] New Zealand Java	Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar
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Jamaican Flower Bat Puerto Rican Flower Bat Cuban Flower Bat	Sucker-footed Bat	Javan Thick-thumbed Bat Tanzanian Woolly Bat Hawaiian Hoary Bat Bartel's Myotis Long-fingered Bat Pond Bat Grey Bat Herman's Myotis Mouse-eared Bat Indiana Bat Townsend's Big-eared Bat	New Zealand Lesser Short-tailed Bat New Zealand Greater Short-tailed Bat Javan Mastiff Bat	Grey Gentle Lemur Broad-nosed Gentle Lemur Golden Gentle Lemur Ring-tailed Lemur Crowned Lemur Sclater's Lemur Black Lemur Mongoose Lemur Red-bellied Lemur Grey-backed Sportive Lemur
Phyllonycteris aphylla Phyllonycteris major Phyllonycteris poeyi	Family Myzopodidae Myzopoda aurita	Family Vespertilionidae Glischropus javanus Kerivoula africana Lasiurus cinereus semotus Myotis bartelsii Myotis capaccinii Myotis qasycneme Myotis grisescens Myotis hermani Myotis sodalis Plecotus townsendii	Family Mystacinidae Mystacina robusta Mystacina tuberculata Family Molossidae Otomops formosus	Order PRIMATES Family Lemuridae Hapalemur griseus Hapalemur simus Hapalemur sp. nova Lemur catta Lemur coronatus Lemur macaco flavifrons Lemur macaco macaco Lemur macaco macaco Lemur mongoz Lemur mongos Lemur dorsalis

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Madagascar Madagascar Madagascar Madagascar Madagascar Madagascar	Madagascar Madagascar Madagascar	Madagascar Madagascar Madagascar Madagascar	Madagascar	West Africa Indochina	East Africa East Africa	Philippines Sulawesi	Bolivia, Brazil Belize, Guatemala, Mexico South America Colombia, Ecuador, Panama Central America, Mexico	
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Milne-Edwards' Sportive Lemur White-footed Sportive Lemur Microdon (?) Sportive Lemur Weasel Lemur Red-tailed Sportive Lemur Northern Sportive Lemur Ruffed Lemur	Hairy-eared Dwarf Lemur Coquerel's Dwarf Lemur Fork-marked Lemur	Woolly Lemur Indris Diademed Sifaka Verreaux's Sifaka	Aye-aye	Angwantibo Pygmy Loris	Thomas's Bushbaby Zanzibar Bushbaby	Philippine Tarsier Lesser Spectral Tarsier	Brown Howler Monkey Guatemalan Black Howler Monkey Long-haired Spider Monkey Brown-headed Spider Monkey Geoffroy's Spider Monkey	
Lepilemur edwardsi Lepilemur leucopus Lepilemur microdon Lepilemur ruficaudatus Lepilemur septentrionalis Varecia variegata	Family Cheirogaleidae Allocebus trichotis Microcebus coquereli Phaner furcifer	Family Indridae Avahi laniger Indri indri Propithecus diadema	Family Daubentoniidae Daubentonia madagascariensis	Family Lorisidae Arctocebus calabarensis Nycticebus pygmaeus	Family Galagidae Galago thomasi Galago zanzibaricus	Family Tarsiidae Tarsius syrichta Tarsius pumilus	Family Cebidae Alouatta fusca Alouatta villosa Ateles belzebuth Ateles fusciceps Ateles geoffroyi	

Burundi, Rwanda, Uganda, Zaire Brazil, Colombia, Venezuela Cameroon, Bioko, Nigeria Cameroon, Bioko, Nigeria Rwanda, Uganda, Zaire Brazil, Colombia, Peru Bolivia, Brazil, Peru Costa Rica, Panama N.Angola, C.Zaire Kenya, Tanzania South America South America Benin, Nigeria South America Ecuador, Peru Congo, Zaire West Africa Brazil, Peru West Africa Colombia Colombia Kenya Brazil Zaire \mathbf{H} Ξ Central American Squirrel Monkey Golden-rumped Lion Tamarin Golden-headed Lion Tamarin Yellow-tailed Woolly Monkey 3uffy-tufted-ear Marmoset 3uffy-headed Marmoset White-throated Guenon Allen's Swamp Monkey Fassel-eared Marmoset Southern Bearded Saki Woolly Spider Monkey White-footed Tamarin Golden Lion Tamarin Fana River Mangabey Russet-eared Guenon 3lack Spider Monkey 3lack-headed Uakari Red & White Uakari Bare-faced Tamarin Cotton-top Tamarin Collared Mangabey Owl-faced Guenon Goeldi's Marmoset Crested Mangabey Emperor Tamarin L'hoest's Monkey White-nosed Saki Black Mangabey White Marmoset Preuss's Guenon Salongo Guenon Woolly Monkey Diana Monkey Masked Titi Cercocebus galeritus galeritus Callithrix argentata leucippe Leontopithecus chrysomelas Cercopithecus erythrogaster Leontopithecus chrysopygus Chiropotes satanas satanas Family Cercopithecidae Allenopithecus nigroviridis Saguinus oedipus oedipus Cacajao melanocephalus Family Callitrichidae Cercopithecus erythrotis Brachyteles arachnoides Leontopithecus rosalia Cercopithecus hamlyni Lagothrix lagothricha Callithrix humeralifer Cercopithecus salongo Cercopithecus preussi Callicebus personatus Lagothrix flavicauda Cercopithecus Ihoesti Cercocebus aterrimus Cercocebus torquatus Chiropotes albinasus Cercocebus galeritus Cercopithecus diana Callithrix flaviceps Saguinus imperator Saguinus leucopus Callimico goeldii Callithrix aurita Saguinus bicolor Saimiri oerstedi Caca jao calvus steles paniscus

Gabon Cameroon, Congo, Eq. Guinea, Gabon West Africa Ghana, Ivory Coast Congo, Bioko, Cameroon East & C.Africa Kenya Tanzania Zanzibar West Africa Ethiopia, Somalia, S.Arabia Cameroon, Bioko, Nigeria Cameroon, Congo, Eq. Guinea, Gabon Ethiopia	Sulawesi Taiwan Sulawesi Sulawesi Sulawesi Mentawai Is (Indonesia) S. India Algeria, Gibraltar*, Morocco China Borneo Java Mentawai Is. (Indonesia) Indochina, S.W.China S.China Bhutan, India S. India C.Vietnam, E.C.Laos, S.Vietnam, S.Laos, E.Cambodia N. Vietnam China China China China China China China
$>$ m $>$ m m $>$ m m m $>$ ∞ m $>$ ∞	$\times\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>\!\!>$
Sun-tailed Guenon Black Colobus Western Red Colobus Miss Waldron's Bay Colobus Pennant's Red Colobus Peter's Red Colobus Tana River Red Colobus Uhehe Red Colobus Zanzibar Red Colobus Olive Colobus Hamadryas Baboon Drill Mandrill Gelada	Muna-Butung Macaque Taiwan Macaque Heck's Macaque Moor Macaque Lion-tailed Macaque Barbary Macaque Tibetan Macaque Tibetan Macaque Proboscis Monkey Javan Leaf Monkey Mentawai Leaf Monkey Mite-headed Black Leaf Monkey White-headed Black Loaf Monkey Nilgiri Leaf Monkey Nilgiri Leaf Monkey Vunnan Snub-nosed Monkey Tonkin Snub-nosed Monkey Sichuan Golden Snub-nosed Monkey
Cercopithecus solatus Colobus satanas Procolobus [badius] badius Procolobus [b.] badius waldroni Procolobus [badius] rufomitratus Procolobus [badius] rufomitratus Procolobus [badius] kirkii Procolobus [badius] kirkii Procolobus [badius] kirkii Procolobus [badius] kirkii Procolobus perus Papio hamadryas Mandrillus leucophaeus Mandrillus sphinx Theropithecus gelada	Macaca brunnescens Macaca cyclopsis Macaca hecki Macaca maura Macaca pagensis Macaca silenus Macaca sylvanus Macaca sylvanus Macaca thibetana Nasalis larvatus Presbytis comata Presbytis potenziani Trachypithecus francoisi Trachypithecus johnii Pygathrix nemaeus Pygathrix nigripes Rhinopithecus bieti Rhinopithecus bieti Rhinopithecus bieti Rhinopithecus roxellanae Simias concolor

China, Indochina Assam, Burma, Yunnan Mentawai Is (Indonesia) Java Indochina, Thailand	Equatorial Africa Rwanda, Uganda, Zaire E. Zaire Zaire Equatorial Africa West Africa Borneo, Sumatra	Central & South America	Brazil	Argentina, Bolivia, Paraguay Argentina South America Brazil	[Sardinia, Corsica]	South Africa Himalayan foothills Mexico Sumatra Ryukyu Is (Japan) Mexico
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Black Gibbon Hoolock Gibbon Kloss's Gibbon Javan Gibbon Pileated Gibbon	Gorilla Mountain Gorilla Eastern Lowland Gorilla Pygmy Chimpanzee Chimpanzee West African Chimpanzee	Giant Anteater	Maned Sloth	Burmeister's Armadillo Pink Fairy Armadillo Giant Armadillo Brazilian Three-banded Armadillo	Sardinian Pika	Riverine Rabbit Hispid Hare Tehuantepec Hare Sumatran Short-eared Rabbit Amami Rabbit Volcano Rabbit
Family Hylobatidae Hylobates concolor Hylobates hoolock Hylobates klossi Hylobates moloch Hylobates pileatus	Family Pongidae Gorilla gorilla beringei Gorilla gorilla graueri Pan paniscus Pan troglodytes Pongo pygmaeus	Order EDENTATA Family Myrmecophagidae Myrmecophaga tridactyla	Family Bradypodidae Bradypus torquatus	Family Dasypodidae Clamyphorus retusus Chlamyphorus truncatus Priodontes giganteus Tolypeutes tricinctus	Order LAGOMORPHA Family Ochotonidae Prolagus sardus	Family Leporidae Bunolagus monticularis Caprolagus hispidus Lepus flavigularis Nesolagus netscheri Pentalagus furnessi Romerolagus diazi

I California (U.S.A.) I California (U.S.A.)	V U.S.A. E Canada V U.S.S.R. E U.S.A. K Costa Rica, Panama	E Baja California (Mexico) E California (U.S.A.) I California (U.S.A.) E California (U.S.A.) E California (U.S.A.) I California (U.S.A.) I California (U.S.A.) V California (U.S.A.) E California (U.S.A.) E California (U.S.A.)	V California (U.S.A.) Ex [F.R.G.] V California (U.S.A.) E California (U.S.A.) E California (U.S.A.) I California (U.S.A.)	I Philippines Ex [Australia] Ex [Australia] R Avstralia R U.S.A. E California (U.S.A.)
Point Arena Mountain Beaver Point Reyes Mountain Beaver	Utah Prairie Dog Vancouver Island Marmot Menzbier's Marmot Delmarva Fox Squirrel Mountain Squirrel	Texas Kangaroo Rat San Quintin Kangaroo Rat Morro Bay Kangaroo Rat Giant Kangaroo Rat Fresno Kangaroo Rat Tipton Kangaroo Rat Stephens Kangaroo Rat White-eared Pocket Mouse Salinas Pocket Mouse Los Angeles Pocket Mouse	San Joaquin Valley Woodrat Bavarian Pine Vole Southern Marsh Harvest Mouse Salt-marsh Harvest Mouse Colorado River Cotton Rat Point Reyes Jumping Mouse	Luzon Forest Rat Rabbit-eared Tree-rat Lesser Stick-nest Rat Greater Stick-nest Rat Beach Vole Amargosa Vole
Order RODENTIA Family Aplodontidae Aplodontia rufa nigra Aplodontia rufa phaea	Family Sciuridae Cynomys parvidens Marmota vancouverensis Marmota menzbieri Sciurus niger cinereus Syntheosciurus brochus	Family Heteromyidae Dipodomys elator Dipodomys gravipes Dipodomys heermanni morroensis Dipodomys ingens Dipodomys nitratoides exilis Dipodomys stephensi Perognathus alticola Perognathus longimembris brevinasus	Family Cricetidae Neotoma fuscipes riparia Pitymys bavaricus Reithrodontomys megalotis limicola Reithrodontomys raviventris Sigmodon arizonae plenus Zapus trinotatus orarius	Family Muridae Batomys granti Conilurus albipes Leporillus apicalis Leporillus conditor Microtus breweri

Notomys amplus Notomys aquilo Notomys fuscus Notomys longicaudatus	Short-tailed Hopping-mouse Northern Hopping-mouse Dusky Hopping-mouse Long-tailed Hopping-mouse	X Y L X y	[Australia] Australia Australia [Australia]
Notomys macrotis Notomys mordax Oryzomys argentatus Pseudomys fieldi	Big-eared Hopping-mouse Darling Downs Hopping-mouse Silver Rice Rat Alice Springs Mouse	ж ж ж ж ж	[Australia] [Australia] U.S.A. [Australia]
Pseudomys oralis Pseudomys praeconis	Hastings River Mouse Shark Bay Mouse		Australia
Tokudaia osimensis muenninki Xeromys myoides Zyzomys pedunculatus	Ryukyu Spiny Rat False Water-rat Central Rock-rat	_ × -	Ryukyu Is Australia Australia
Family Erithizontidae Chaetomys subspinosus	Thin-spined Porcupine	П	Brazil
Family Chinchillidae Chinchilla brevicaudata Chinchilla lanigera	Short-tailed Chinchilla Long-tailed Chinchilla		Andes Chile
Family Capromyidae Capromys angelcabrerai Capromys auritus	Cabrera's Hutia Large-eared Hutia	μщ	Cuba Cuba
Capromys garridoi Capromys melanurus	Garrido's Hutia Bushy-tailed Hutia		Cuba Cuba
Capromys nanus Capromys sanfelipensis Geocapromys brownii Geocapromys ingrahami	Dwarr Hutia Little Earth Hutia Jamaican Hutia Bahamian Hutia	ᄞᇚᅜ	Cuba Cuba Jamaica Bahamas
Plagiodontia aedium	Hispaniolan Hutia	i —	Hispaniola
Order CETACEA Family Iniidae Inia geoffrensis	Boto, Amazon River Dolphin	>	South America
Family Platanistidae Platanista gangetica Platanista minor	Ganges River Dolphin Indus River Dolphin	> щ	India, Bangladesh, Nepal, Bhut Pakistan

Yangtse R. (China) Brazil, Uruguay, Argentina	Coastal South Atlantic Coastal Chile Coastal South Africa & Namibia Coastal New Zealand	Arctic & sub-Arctic Ocean Arctic Ocean Rivers and coasts from Bay of Bengal to N.Australia	Coastal waters of N.Hemisphere Gulf of California (Mexico)	North Atlantic	All Oceans All Oceans All Oceans	Arctic, N.Atlantic & N.Pacific Oceans S. Atlantic, Pacific, Indian & Southern	Oceans N.Atlantic & N.Pacific Oceans	North America, Middle East, Eurasia U.S.A.
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Baiji, Yangtze River Dolphin Franciscana, La Plata Dolphin	Commerson's Dolphin Black Dolphin Heaviside's Dolphin Hector's Dolphin	White Whale Narwhal Irrawaddy Dolphin	Harbour Porpoise Vaquita	Northern Bottlenose Whale	Blue Whale Fin Whale Humpback Whale	Bowhead Whale Southern Right Whale	Northern Right Whale	Grey Wolf Red Wolf
Family Pontoporiidae Lipotes vexillifer Pontoporia blainvillei	Family Delphinidae Cephalorhynchus commersonii Cephalorhynchus eutropia Cephalorhynchus heavisidii Cephalorhynchus hectori	Family Monodontidae Delphinapterus leucas Monodon monoceros Orcaella brevirostris	Family Phocoenidae Phocoena phocoena Phocoena sinus	Family Ziphiidae Hyperoodon ampullatus	Family Balaenopteridae Balaenoptera musculus Balaenoptera physalus Megaptera novaeangliae	Family Balaenidae Balaena mysticetus Eubalaena australis	Eubalaena glacialis	Order CARNIVORA Family Canidae Canis lupus Canis rufus

Ethiopia South America Asia [Falkland Is] South America Subsaharan Africa South America India, Pakistan, S.Nepal	China India, Nepal, Sri Lanka Iran, Pakistan South America [Mexico, U.S.A.] Arctic	Nepal to China [Barbados] Cozumel I. (Mexico) Cozumel I. (Mexico)	Asia Coastal Chile & Peru, [Argentina] South America Eurasia Asia W. Argentina, C.&S.Chile South-east Asia South America E.Texas (U.S.A.) Eurasia, North America Taiwan S.India Japan Sabah Java
日 Y Y X Y Y Y X	民 L 豆 > 豆 >	X X X X	×>>>×> ×> -> ××
Simen Fox Maned Wolf Dhole Falkland Island Wolf Small-eared Zorro African Wild Dog Bush Dog Bengal Fox	Giant Panda Sloth Bear Baluchistan Bear Spectacled Bear Mexican Grizzly Bear Polar Bear	Red Panda Barbados Racoon Cozumel Island Racoon Cozumel Island Coati	Oriental Small-clawed Otter Marine Otter La Plata Otter European Otter Smooth-coated Otter Southern River Otter Hairy-nosed Otter Giant Otter Big Thicket Hog-nosed Skunk Wolverine Taiwan Yellow-throated Marten Nilgiri Marten Tsushima Island Marten Kinabalu Ferret-badger Javan Ferret-badger
Canis simensis Chrysocyon brachyurus Cuon alpinus Dusicyon australis Dusicyon microtis Lycaon pictus Speothos venaticus Vulpes bengalensis	Family Ursidae Ailuropoda melanoleuca Melursus ursinus Selenarctos thibetanus gedrosianus Tremarctos ornatus Ursus arctos nelsoni Ursus maritimus	Family Procyonidae Ailurus fulgens Procyon gloveralleni Procyon pygmaeus Nasua nelsoni	Family Mustelidae Aonyx cinerea Lutra felina Lutra lutra lutra lutra Lutra provocax Lutra sumatrana Lutra sumatrana Pteronura brasiliensis Conepatus mesoleucus telmalestes Gulo gulo Martes flavigula chrysospila Martes melampus tsuensis Melogale orientalis

U.S.A. Canada, U.S.A. Ryukyu Is (Japan) Andes Pakistan Asia U.S.A., Central & South America Portugal, Spain South-east Asia India, Sri Lanka Asia Central & South America Central & South America Central & South America U.S.A., Central & South America Asia India U.S.A., Central & South America Asia Asia Asia	Chile Mexico, U.S.A. Japan, North & South Korea U.S.S.R.	Mediterranean & Mauritanian coasts Hawaii [Caribbean] Finland Kuril Sea	Asia Africa
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Florida Cougar Eastern Cougar Iriomote Cat Andean Cat Pakistan Sand Cat Marbled Cat Ocelot Pardel Lynx Flat-headed Cat Rusty-spotted Cat Asiatic Golden Cat Little Spotted Cat Margay Jaguarundi Clouded Leopard Asiatic Lion Jaguar Leopard Tiger Snow Leopard	Juan Fernandez Fur Seal Guadalupe Fur Seal Japanese Sea Lion Laptev Walrus	Mediterranean Monk Seal Hawaiian Monk Seal Caribbean Monk Seal Saimaa Seal Kuril Seal	Asian Elephant African Elephant
Felis concolor coryi Felis concolor cougar Felis iriomotensis Felis jacobita Felis margarita scheffeli Felis marmorata Felis pardalis Felis pardalis Felis pardina Felis pardina Felis pardina Felis temmincki Felis viedii Felis viedii Felis vagouaroundi Neofelis nebulosa Panthera leo persica Panthera igriss Panthera igriss Panthera tigris	Family Otariidae Arctocephalus philippii Arctocephalus townsendi Zalophus californianus japonicus Family Odobenidae Odobenus rosmarus laptevi	Family Phocidae Monachus monachus Monachus schauinslandi Monachus tropicalis Phoca hispida saimensis Phoca vitulina stejnegeri	Order PROBOSCIDEA Family Elephantidae Elephas maximus Loxodonta africana

Europe Java, S.Sumatra? U.S.A. C.Europe to Greece & Turkey	Java Indochina Madagascar South-east Asia Madagascar Madagascar Ethiopia, N.Somalia Spain Liberia, Guinea Sulawesi S.India Liberia, Ivory Coast, Sierra Leone? Western Ghats (India)	N.Coastal Tanzania, Kenya Zanzibar C.Kenya, S.E.Uganda Madagascar Madagascar N.E.Liberia, Ivory Coast?, Guinea? Madagascar Madagascar	Southern Africa Algeria, Morocco, Tunisia Africa, Middle East, Iran, U.S.S.R. Iran, U.S.S.R. Borneo U.S.S.R.
> \(\mu \)	_ X X X > > X X X X L L H	ほーななーEVK	> H > H K K
European Mink Indonesian Mountain Weasel Black-footed Ferret European Marbled Polecat	Javan Small-toothed Palm Civet Owston's Palm Civet Fossa Otter civet Falanouc Malagasy Civet Abyssinian Genet Ibiza Common Genet Johnston's Genet Sulawesi Palm Civet Jerdon's Palm Civet Leighton's Linsang Malabar Large Spotted Civet	Sokoke Bushy-tailed Mongoose Zanzibar Bushy-tailed Mongoose Jackson's Mongoose Giant-striped Mongoose Malagasy Broad-striped Mongoose Liberian Mongoose Malagasy Narrow-striped Mongoose Malagasy Brown-tailed Mongoose	Brown Hyaena Barbary Hyaena Cheetah Asiatic Cheetah Bornean Bay Cat Turkmenian Caracal Lynx
Mustela lutreola Mustela lutreolina Mustela nigripes Vormela peregusna peregusna	Family Viverridae Arctogalidia trivirgata trilineata Chrotogale owstoni Cryptoprocta ferox Cynogale bennettii Eupleres goudotii Fossa fossana Genetta abyssinica Genetta genetta isabelae Genetta johnstoni Macrogalidia musschenbroekii Paradoxurus jerdoni Poiana richardsoni liberiensis	Family Herpestidae Bdeogale crassicauda omnivora Bdeogale crassicauda tenuis Bdeogale jacksoni Galidictis grandidiensis Galidictis fasciata Liberiictis kuhni Mungotictis decemlineata Salanoia concolor	Family Hyaenidae Hyaena brunnea Hyaena hyaena barbara Family Felidae Acinonyx jubatus Acinonyx jubatus Felis badia Felis caracal michaelis

Coastal Indian & Western Pacific Oceans [Bering Sea, North Pacific Ocean]	Amazon basin Caribbean & South American Coasts & Rivers		North-east Africa Ethiopia, Kenya, [Somalia] Asia [Syria] Pakistan, India [China, Mongolia] [South Africa] Angola, Namibia South Africa	Central & North-west South America South-east Asia North-west South America	Zaire, S.Sudan Africa South-east Asia Java India, Nepal
EX <	>> >	•	E < E E < C	> m >	ппппп
Dugong Steller's Sea Cow	Amazonian Manatee West Indian Manatee	Hest Attitudit Manated	African Wild Ass Grevy's Zebra Asiatic Wild Ass Syrian Wild Ass Indian Wild Ass Przewalski's Horse True Quagga Hartmann's Mountain Zebra Cape Mountain Zebra	Central American Tapir Malayan Tapir Mountain Tapir	Northern Square-lipped Rhinoceros Black Rhinoceros Sumatran Rhinoceros Javan Rhinoceros Great Indian Rhinoceros
Order SIRENIA Family Dugongidae Dugong dugon Hydrodamalis gigas	Family Trichechidae Trichechus inunguis Trichechus manatus	Order PERISSODACTYLA	Family Equidae Equus africanus Equus hemionus Equus hemionus hemippus Equus przewalskii Equus quagga quagga Equus zebra hartmannae	Family Tapiridae Tapirus bairdii Tapirus indicus Tapirus pinchaque	Family Rhinocerolidae Ceratotherium simum cottoni Diceros bicornis Didermocerus sumatrensis Rhinoceros sondaicus Rhinoceros unicornis

Order ARTIODACTYLA Family Suidae

Sus barbatus cebifrons Sus scrofa riukiuanus Babyrousa babyrussa Sus barbatus oi Sus verrucosus Sus salvanius

Family Tayassuidae Catagonus wagneri

Family Hippopotamidae

Choeropsis liberiensis

Family Camelidae Camelus bactrianus Vicugna vicugna

Cervus elaphus corsicanus Cervus elaphus bactrianus Cervus elaphus macneilli Cervus elaphus barbarus Cervus elaphus wallichi Blastocerus dichotomus Cervus elaphus hanglu Axis calamianensis Cervus albirostris Cervus duvauceli Cervus alfredi Axis kuhli

Cervus elaphus yarkandensis Cervus nippon grassianus Cervus nippon keramae Cervus nippon kopschi Cervus eldi siamensis Family Cervidae Cervus eldi eldi

Sulawesi, Buru, Sulu & Togian Is Bangladesh], India, Nepal Visayan Is (Philippines) Malaysia, Indonesia Ryukyu Is (Japan) ava & Bawean I. Javan and Bawean Warty Pigs Ryukyu Islands' Wild Pig Western Bearded Pig Visayan Warty Pig Pygmy Hog Babirusa

Argentina, Bolivia, Paraguay

West Africa >

Pygmy Hippopotamus

Chacoan Peccary

Wild Bactrian Camel

Vicuna

China, Mongolia Andes Calamian I. (Philippines) /isayan Is (Philippines) Central South America Sawean I. (Indonesia) ndia, Nepal China Visayan Spotted Deer

Thorold's Deer

Bactrian Deer Barbary Deer

Swamp Deer

Calamian Deer

Kuhl's Deer

Marsh Deer

Afghanistan, U.S.S.R. Corsica], Sardinia Algeria, Tunisia China, Bhutan China ndia Corsican Red Deer

M'Neill's Deer

Hangul

Thailand Brow-antlered Deer Manipur Brow-antlered Deer South China Sika Yarkand Deer Ryukyu Sika Shansi Sika

South-east Asia

China

ndia

Ryukyu Is

China

China China

North China Sika

Cervus nippon mandarinus

-18-

Dibatag Ader's Duiker Jentink's Duiker Abbott's Duiker Zebra Duiker Bontebok Hunter's Antelope Beira Antelope K	Hippocamelus antisensis Hippocamelus bisulcus Moschus chrysogaster (subspecies) Muntiacus crinifrons Muntiacus feae Odocoileus virginianus cerrosensis Odocoileus virginianus clavium Ozotoceros bezoarticus celer Pudu mephistophiles Family Antilocapridae Antilocapra americana peninsularis Antilocapra americana sonoriensis Bison bonasus Bos gaurus Antilocapra americana sonoriensis Antilocapra americana sonoriensis Bos gaurus Bos gaurus Bos gaurus Bos gaurus Antilocapra americana sonoriensis Bubalus depressicornis Bubalus derbianus derbianus Addax nasomaculatus Adepyceros melampus petersi Atcelaphus buselaphus swaynei	Persian Fallow Deer North Andean Huemul South Andean Huemul Himalayan subspecies of Musk Deer Black Muntjac Fea's Muntjac Fea's Muntjac Cedros Island Mule Deer Key Deer Argentinian Pampas Deer Northern Pudu Lower California Pronghorn Sonoran Pronghorn Sonoran Pronghorn European Bison Gaur Wild Yak Banteng Kouprey Wild Asiatic Water Buffalo Lowland Anoa Tamaraw Mountain Anoa Western Giant Eland Addax Black-faced Impala Swayne's Hartebeest Tora Hartebeest	иш>ш>ш>ш>ш	Mesopotamia North Andes South Andes Himalayas China Burma, Thailand Mexico U.S.A. Argentina Andes Mexico, U.S.A. Wexico, U.S.A. U.S.S.R., Poland South-east Asia Central Asia Central Asia South-east Asia Indochina India, Nepal Sulawesi Philippines Sulawesi West Africa Sahara/Sahel Angola, Namibia Ethiopia, Somalia Ethiopia, Somalia Ethiopia, Somalia
Abbott's Duiker Zebra Duiker V Bontebok Hunter's Antelope R Beira Antelope	Ammodorcas clarkei Cephalophus adersi Cephalophus jentinki	Dibatag Ader's Duiker Jentik's Duiker	ц>>щ;	Ethiopia, Somalia Kenya, Tanzania, Zanzibar Ivory Coast, Liberia
	us spaatx nus zebra ts dorcas ts hunteri us megalotis	Abbott's Duiker Zebra Duiker Bontebok Hunter's Antelope Beira Antelope	>>> \	Tanzania Ivory Coast, Liberia, Sierra Leo South Africa Kenya, Somaiia, Tanzania Djibouti, Ethiopia, Somalia

Sahara/Sahel & Middle East Czechoslovakia, Poland Afghanistan, Pakistan North-eastern Africa Arabia, Middle East Burma, India, China Arabia, Middle East North-west Africa Senegal to Eritrea Somalia, Ethiopia Sardinia, Corsica Southern Africa West Himalayas Mtns of C.Asia Oman, U.A.E. South Africal Sahara/Sahel Sahara/Sahel Sahara/Sahel Sahara/Sahel Zanzibar Ethiopia Ethiopia Sumatra Angola Arabia Faiwan rance Cyprus China China Spain ndia Straight-horned Markhor Slender-horned Gazelle Soemmerring's Gazelle Saudi Goitred Gazelle Scimitar-horned Oryx Giant Sable Antelope Red-fronted Gazelle Chartreuse Chamois Sardinian Mouflon Mountain Gazelle Abruzzo Chamois Cyprus Mouflon Juvier's Gazelle Mountain Nyala Formosan Serow Szechwan Takin Sumatran Serow Speke's Gazelle Dorcas Gazelle Tatra Chamois 3arbary Sheep Zanzibar Suni Dama Gazelle Arabian Oryx Golden Takin Pyrenean Ibex Arabian Tahr Nilgiri Tahr Walia Ibex Red Goral Bluebuck Markhor Lechwe apricornis sumatraensis sumatraensis Neotragus moschatus moschatus Rupicapra rupicapra cartusiana Capricornis crispus swinhoei Sazella subgutturosa marica Sudorcas taxicolor bed fordi Rupicapra rupicapra tatrica Rupicapra pyrenaica ornala Sudorcas taxicolor tibetana Capra pyrenaica pyrenaica Capra falconeri megaceros Hippotragus niger variani Hippotragus leucophaeus Ovis orientalis musimon Ovis orientalis ophion Gazella soemmerringi Hemitragus hylocrius Vemorhaedus bailevi Hemitragus jayakari Fragelaphus buxtoni Ammotragus lervia Gazella leptoceros Sazella rufifrons Capra falconeri Sazella gazella Sazella dorcas Sazella spekei Sazella cuvieri Oryx dammah Oryx leucoryx Gazella dama Capra walie Ovis ammon Kobus leche

BIRDS

Apteryx owenii

Order TINAMIFORMES Crypturellus transfasciatus Nothoprocta taczanowskii Nothoprocta kalinowskii Crypturellus noctivagus Crypturellus saltuarius Family Tinamidae Tinamus solitarius Tinamus osgoodi Taoniscus nanus Nothura minor

Order SPHENISCIFORMES Family Speniscidae

Megadyptes antipodes Spheniscus humboldti Spheniscus demersus

Order PODICIPEDIFORMES

Family Podicipedidae Tachybaptus rufolavatus Podiceps taczanowskii Tachybaptus pelzelni Podiceps gallardoi Podilymbus gigas Podiceps andinus

Order PROCELLARIIFORMES

Diomedea amsterdamensis Family Diomedeidae Diomedea albatrus

Amsterdam Albatross Short-tailed Albatross

Little Spotted Kiwi

New Zealand

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Yellow-legged Tinamou Taczanowski's Tinamou Pale-browed Tinamou Kalinowski's Tinamou Magdalena Tinamou Solitary Tinamou Dwarf Tinamou Black Tinamou Lesser Nothura

Argentina, Brazil, Paraguay

Colombia, Peru

Colombia

Brazil

Ecuador, Peru

Peru Peru

> Yellow-eyed Penguin Peruvian Penguin Jackass Penguin

Namibia, South Africa

Chile, Peru

Madagascar Madagascar Guatemala

New Zealand

Argentina, Brazil

Brazil

Madagascar Little Grebe Colombian Grebe Hooded Grebe Alaotra Grebe Atitlan Grebe Junin Grebe

Argentina Peru

Colombia

Ex Ex

Amsterdam I. (France)

Japan шш

et

E Mauritius R Cape Verde Is, Madeira (Portugal) E Madeira (Portugal) V Cuba, Dominican Republic, Haiti E Bermuda I Papua New Guinea, Solomon Is Fitcairn Is (U.K.), Tuamotu Archipelago (France), Tubuai Is (France) Chatham Is (New Zealand) E Galapagos (Ecuador), Hawaiian Is (U.S.A.) K* New Zealand E Chatham Is (New Zealand) E Chatham Is (New Zealand) K* New Zealand E Chatham Is (New Zealand)	E New Zealand V New Zealand V New Zealand K* Juan Fernandez Is (Chile) I Papua New Guinea K* Hawaiian Is (USA) K* Mexico	 Ex Mexico K* Eastern Pacific Ocean K* Hawaiian Is (U.S.A.), Japan K* Chile, Ecuador, Peru 	K* Chile, Peru	 V Western Palearctic K* Burma, China, India, Indonesia, Kampuchea, Laos, Malaysia, Thailand, Viet
Mascarene Black Petrel Gon-gon Freira Black-capped Petrel Cahow Beck's Petrel Murphy's Petrel Magenta Petrel Cook's Petrel Figure 18	el Black Petrel 3d Shearwater Shearwater hearwater 's Shearwater	Guadalupe Storm-petrel Markham's Storm-petrel Sooty Storm-petrel Ringed Storm-petrel	Peruvian Diving Petrel	Dalmatian Pelican Spot-billed Pelican
Plerodroma aterrima Plerodroma feae Plerodroma madeira Plerodroma masitata Plerodroma cahow Plerodroma ultima Plerodroma phaeopygia Plerodroma ecoki Plerodroma ecoki Plerodroma ecoki Plerodroma magentae Plerodroma magentis	Procellaria parkinsoni Procellaria westlandica Puffinus creatopus Puffinus heinrothi Puffinus auricularis	Family Hydrobatidae Oceanodroma macrodactyla Oceanodroma markhami Oceanodroma tristrami	Family Pelecanoididae Pelecanoides garnoti	Order PELECANIFORMES Family Pelecanidae Pelicanus crispus Pelecanus philippensis

Family Procellariidae

Christmas I. (Australia)	New Zealand Western Palearctic Galapagos (Ecuador)	Ascension I. (U.K.) Christmas I. (Australia)	 New Zealand China, Indonesia, Japan, Philippines, Taiwan 			Central and East Africa	Indonesia, Kampuchea, Malaysia, Viet Ni Indonesia, Malaysia, Thailand China, Japan, South Korea, U.S.S.R. * Bangladesh, Burma, India, Kampuchea, Laos, Thailand, Viet Nam	Burma, Indonesia, Kampuchea, Laos,	
Щ	* * *	₩>	* *	* ~ >	× × ×	S	> " m X	—	以正
Abbott's Booby	New Zealand King Cormorant Pygmy Cormorant Galapagos Flightless Cormorant	Ascension Frigatebird Christmas Frigatebird	New Zealand Little Bittern Japanese Night-heron	White-eared Night-heron Slaty Egret Chinese Egret	Madagascar Heron White-bellied Heron	Shoebil1	Milky Stork Storm's Stork Oriental White Stork Greater Adjutant	White-shouldered Ibis	Giant Ibis Northern Bald Ibis
Family Sulidae Sula abbotti	Family Phalacrocoracidae Phalacrocorax carunculatus Phalacrocorax pygmeus Nannopterum harrisi	Family Fregatidae Fregata aquila Fregata andrewsi	Order CICONIIFORMES Family Ardeidae Ixobrychus novaezelandia Gorsachius goisagi	Gorsachius magnificus Egretta vinaceigula Egretta eulophotes	Ardea humbloti Ardea imperialis	Family Balaenicipitidae Balaeniceps rex	Family Ciconiidae Mycteria cinerea Ciconia stormi Ciconia boyciana Leptoptilos dubius	Family Threskiornithidae Pseudibis davisoni	Pseudibis gigantea Geronticus eremita

Lesotho, South Africa, Swaziland China, Japan Sao Tomé China, Japan, North Korea, Philippines, Taiwan, Viet Nam	Argentina, Bolivia, Chile, Peru Argentina, Bolivia, Chile, Peru	Colombia, Venezuela	Caribbean Islands Western Palearctic Hawaiian Is (U.S.A.) Australia South Korea, U.S.S.R. Bangladesh, Burma, India, Indonesia, Thailand China, Japan, North Korea, South Korea, U.S.S.R. Madagascar New Zealand Western Palearctic India, Nepal	Argentina, Brazil, Paraguay China, U.S.S.R. New Zealand Western Palearctic
以下,	* *	*	>*>**	**
Southern Bald Ibis Crested Ibis Dwarf Olive Ibis Black-faced Spoonbill	Andean Flamingo Puna Flamingo	Northern Screamer	West Indian Whistling-duck Lesser White-fronted Goose Hawaiian Goose Freckled Duck Crested Shelduck White-winged Duck Mandarin Duck Baikal Teal Madagascar Teal New Zealand Brown Teal Marbled Teal Pink-headed Duck Madagascar Pochard	Brazilian Merganser Scaly-sided Merganser Auckland Island Merganser White-headed Duck
Geronticus calvus Nipponia nippon Bostrychia bocagei Platalea minor	Family Phoenicopteridae Phoenicoparrus and inus Phoenicoparrus jamesi	Order ANSERIFORMES Family Anhimidae Chauna chavaria	Family Anatidae Dendrocygna arborea Anser erythropus Branta sandvicensis Stictonetta naevosa Tadorna cristata Cairina scutulata Aix galericulata Anas formosa Anas bernieri Anas aucklandica Marmaronetta angustirostris Rhodonessa caryophyllacea	Mergus squamatus Mergus squamatus Mergus australis Oxyura leucocephala

Order FALCONIFORMES Family Cathartidae

Gymnogyps californianus

Family Accipitridae

Chondrohierax wilsonii Haliaeetus vociferoides Haliaeetus leucoryphus Henicopernis infuscata Milvus milvus

Haliaeetus pelagicus Haliaeetus albicilla

Aegypius monachus Gyps coprotheres Spilornis klossi

Spilornis kinabaluensis Spilornis elgini

Eutriorchis astur Accipiter nanus

Accipiter brachyurus Accipiter imitator Accipiter collaris

Leucopternis plumbea Accipiter poliogaster Accipiter gundlachii

Leucopternis occidentalis Harpyhaliaetus solitarius Leucopternis lacernulata Leucopternis polionota

Harpyhaliaetus coronatus

Buteo galapagoensis Morphus guianensis Buteo solitarius Suteo ridgwayi Buteo ventralis

California Condor

Black Honey Buzzard Cuban Kite Red Kite

Madagascar Fish-eagle Pallas's Fish-eagle White-tailed Fish-eagle

3lack (Cinereous) Vulture Steller's Fish-eagle Cape Vulture

Kinabalu Serpent-eagle Vicobar Serpent-eagle Dark Serpent-eagle

Madagascar Serpent Eagle Small Sparrowhawk

Semi-collared Sparrowhawk New Britain Sparrowhawk mitator Sparrowhawk

White-necked Hawk Grev-backed Hawk Grey-bellied Hawk Jundlach's Hawk Plumbeous Hawk

Mantled Hawk Solitary Eagle

Crowned Eagle

Red-tailed Hawk Ridgway's Hawk Galapagos Hawk Hawaiian Hawk Crested Eagle

U.S.A. Щ

Cuba

Papua New Guinea

Western Palearctic Madagascar Burma, China, India, Iran, Pakistan,

Japan, Korea, U.S.S.R. Palearctic

Southern Africa

U.S.S.R.

Nicobar Is (India) Palearctic

Andaman Is (India) Malaysia

Madagascar Indonesia

Papua New Guinea

Colombia, Ecuador, Peru, Venezuela Papua New Guinea, Solomon Is

Cuba

South America

Colombia, Ecuador, Panama, Peru Ecuador Brazil

Colombia, Costa Rica, Ecuador, Argentina, Brazil, Paraguay

Guatemala, Honduras, Mexico, Panama, Argentina, Bolivia, Brazil, Paraguay, Peru, Venezuela

Dominican Republic, Haiti Galapagos (Ecuador) Uruguay

Hawaiian Is (U.S.A.) Argentina, Chile

South and Central America

Harpyopsis novaeguineae Pithecophaga jefferyi Spizaetus philippensis Spizaetus bartelsi Harpia harpyja Aquila adalberti Aquila heliaca

Family Falconidae

Micrastur plumbeus Micrastur buckleyi Falco deiroleucus Falco punctatus

Order GALLIFORMES

Megapodius nicobariensis Family Megapodiidae Megapodius pritchardii Megapodius bernsteinii Megapodius laperouse Macrocephalon maleo Megapodius wallacei Aepypodius bruijnii Leipoa ocellata

Family Cracidae

penelope ochrogaster Ortalis erythroptera Penelope albipennis Penelope perspicax Penelope jacucaca Penelope dabbenei penelope barbata Penelopina nigra Pipile jacutinga

Oreophasis derbianus Pauxi pauxi Mitu mitu

New Guinea Harpy Eagle Spanish Imperial Eagle Javan Hawk-eagle Philippine Eagle Imperial Eagle Harpy Eagle

ndonesia, Papua New Guinea

Western Palearctic

Philippines

ndonesia

Portugal, Spain

Philippines

South and Central America

Plumbeous Forest-falcon Orange-breasted Falcon Traylor's Forest-falcon Mauritius Kestrel

Micronesian Scrubfowl Niuafo'ou Scrubfowl Moluccan Scrubfowl Nicobar Scrubfowl Sula Scrubfowl Malleefowl

Waigeo Brush-turkey Maleo Rufous-headed Chachalaca White-winged Guan Red-faced Guan Bearded Guan

Chestnut-bellied Guan White-browed Guan Cauca Guan

Biack-fronted Piping Guan Highland Guan

Pauxi unicornis

Philippine Hawk-eagle

3razil, Colombia, Ecuador

Ecuador, Peru Mauritius South and Central America

India

3elau, Northern Mariana Is (U.S.A.) ndonesia Conga

ndonesia Australia

ndonesia ndonesia

Argentina, Bolivia Ecuador, Peru Ecuador, Peru

Colombia Peru

Brazil Brazil

Argentina, Brazil, Paraguay

El Salvador, Guatemala, Honduras, Mexico, Guatemala, Mexico Nicaragua

Brazil

Colombia, Venezuela

Northern Helmeted Curassow Southern Helmeted Curassow

Alagoas Curassow

Horned Guan

Bolivia, Peru

Bolivia, Brazil, Colombia, Ecuador, Peru

Colombia

Brazil

Crax blumenbachii Crax globulosa Crax alberti

Family Meleagridae Agriocharis ocellata

Odontophorus hyperythrus Francolinus camerunensis Odontophorus strophium Francolinus ochropectus Arborophila atrogularis Perdicula manipurensis Arborophila rufipectus Family Phasianidae Francolinus swierstrai Tetraogallus altaicus Dendrortyx barbatus Arborophila gingica Francolinus gularis Arborophila davidi Francolinus nahani

Tragopan melanocephalus Arborophila cambodiana Arborophila charltonii Ophrysia superciliosa Arborophila ardens Tragopan caboti Tragopan blythi

Lophophorus sclateri Lophophorus lhuysii Lophura imperialis

Lophura hatinhensis Lophura edwardsi Lophura swinhoii Lophura bulweri Lophura ignita Lophura diardi

Blue-billed Curassow Red-billed Curassow Wattled Curassow

Ocellated Turkey

Mount Cameroon Francolin Bearded Wood Partridge Chestnut Wood Quail Sorgeted Wood Quail Djibouti Francolin Altai Snowcock

swierstra's Francolin Manipur Bush Ouail Nahan's Francolin Swamp Partridge

Orange-necked Partridge White-cheeked Partridge Rickett's Partridge Sichuan Partridge

Chestnut-necklaced Partridge Chestnut-headed Partridge White-eared Partridge Himalayan Quail

Western Tragopan Cabot's Tragopan Blyth's Tragopan Sclater's Monal Chinese Monal

Edwards's Pheasant Viet Nam Pheasant Swinhoe's Pheasant mperial Pheasant Siamese Fireback Crested Fireback

Bulwer's Pheasant

Indonesia, Malaysia

Mexico, Guatemala, Belize

*

Colombia Mexico

Mongolia, U.S.S.R. Colombia Djibouti

Cameroon Angola

Bangladesh, India, Nepal Uganda, Zaire

Bangladesh, India ndia, Burma

China China

Kampuchea, Thailand Viet Nam

indonesia, Malaysia, Thailand China

India, Pakistan India

Bhutan, Burma, China, India China

Burma, China, India China

Laos, Viet Nam Viet Nam Viet Nam

Burma, Indonesia, Malaysia, Thailand Taiwan

Kampuchea, Laos, Thailand, Viet Nam

Burma, China, India China China India, Nepal, Pakistan China Burma, China, India Taiwan China China China Viet Nam Burma, Malaysia, Thailand Indonesia Philippines Laos, Malaysia, Viet Nam Burma, China, Indonesia, Kampuchea,	Laos, Inaliand, Viet Nam Zaire	West Africa	Iran, Turkey, U.S.S.R.	Madagascar Madagascar Madagascar	Indonesia Philippines Australia	Australia
> 目状目目及び状状が大がなり	S	Щ	**	** * * *	* * *	**
White Eared-pheasant Brown Eared-pheasant Blue Eared-pheasant Cheer Pheasant Hume's Pheasant Mikado Pheasant Reeves's Pheasant Cady Amherst's Pheasant Carmain's Peacock-pheasant Malaysian Peacock-pheasant Bornean Peacock-pheasant Crested Argus Green Peafowl	Congo Peacock	White-breasted Guineafowl	Caucasian Black Grouse	White-breasted Mesite Brown Mesite Subdesert Mesite	Sumba Buttonquail Worcester's Buttonquail Black-breasted Buttonquail	Plains-wanderer
Crossoptilon crossoptilon Crossoptilon mantchuricum Crossoptilon auritum Catreus wallichi Syrmaticus ellioti Syrmaticus nikado Syrmaticus reevesi Chrysolophus amherstiae Polyplectron germaini Polyplectron malacense Polyplectron schleiermacheri Polyplectron emphanum Rheinardia ocellata Pavo mulicus	Afropavo congensis	Family Numididae Agelastes meleagrides	Family Tetraonidae Tetrao mlokosiewiczi	Order GRUIFORMES Family Mesitornithidae Mesitornis variegata Mesitornis unicolor Monias benschi	Family Turnicidae Turnix everetti Turnix worcesteri Turnix melanogaster	Family Pedionomidae Pedionomus torquatus

Family Gruidae Grus nigricollis Grus monacha	Black-necked Crane Hooded Crane	>>	Bhutan, Burma, China, India, Viet Nam China, Japan, North Korea, South Korea,
Grus japonensis	Japanese Crane	>	U.S.S.R. China, Japan, North Korea, South Korea,
Grus americana Grus vipio	Whooping Crane White-naped Crane	E ►	Canada, U.S.A. China, Japan, North Korea, South Korea,
Grus leucogeranus Bugeranus carunculatus	Siberian Crane Wattled Crane	> 0	U.S.S.R. Afghanistan, China, India, Iran, U.S.S.R. Ethiopia, Central and southern Africa
Family Rallidae Rallus okinawae Rallus wetmorei	Okinawa Rail Plain-flanked Rail	* *	Japan Venezuela
Rallus antarcticus Rallus seminlumbeus	Austral Rail Rocota Rail	* * >	Argentina, Chile
Rallus muelleri	Auckland Island Rail	- ₁₄ ;	New Zealand
Kallus owsioni Allantisia rogersi	Guam Rail Inaccessible Rail	> ¤	Guam (U.S.A.) Inaccessible I. (U.K.)
Tricholimnas lafresnayanus	New Caledonian Rail	х н	New Caledonia (France)
Aramidopsis plateni	Snoring Rail	* <u>*</u>	Indonesia
Cyanolimnas cerverai Nesoclopeus woodfordi	Zapata Rail Woodford's Rail	× ¥	Cuba Papua New Guinea, Solomon Is
Nesoclopeus peociloptera	Barred-wing Rail	# 2 4	Fiji
Habroptila wallacii	Invisible Rail	4 * ⊻	Indonesia
Crex crex	Corncrake	* *	Africa, Western Palearctic
Porzana spiloptera Nesonhulay oter	Dot-winged Crake	* *	Argentina, Uruguay
Laterallus xenopterus	Horqueta or Rufous-faced Crake	**	Brazil, Paraguay
Laterallus levraudi	Rusty-flanked Crake	* *	Venezuela
Columnicops exquisita Sarothrura ayresi	Siberian Crake White-winged Flufftail	· -	China, Japan, South Korea, U.S.S.K. Ethiopia, southern Africa
Sarothrura watersi Amaurornis olivieri	Slender-billed Flufftail Sakalava Rail	⊢ ⊁	Madagascar Madagascar
			O. D.

Gough I. (U.K.) Solomon Is New Zealand Argentina, Bolivia, Chile	Bangladesh, Burma, India, Indonesia,	New Caledonia (France)	Western Palearctic Palearctic India Western Palearctic India, Kampuchea, Nepal India	Canary Is (Spain) Chatham Is (New Zealand)	New Zealand	Asia, north-east Africa Indonesia Canada, U.S.A. Madagascar St. Helena (U.K.) Australia New Zealand	Canada, U.S.A. Alaska (U.S.A.), Pacific Ocean
及「臣民	* *	Ħ	α∝> _¥ пп	щщ	Щ	х - х к к х н	ш¥
Gough Moorhen San Cristobal Mountain Rail Takahe Horned Coot	Masked Finfoot	Kagu	Little Bustard Great Bustard Great Indian Bustard Houbara Bustard Bengal Florican Lesser Florican	Canarian Black Oystercatcher Chatham Island Oystercatcher	Black Stilt	Sociable Plover Javan Wattled Lapwing Piping Plover Madagascar Plover St. Helena Plover Hooded Plover New Zealand Shore Plover	Eskimo Curlew Bristle-thighed Curlew
Gallinula comeri Gallinula sylvestris Notornis mantelli Fulica cornuta	Family Heliornithidae Heliopais personata	Family Rhynochetidae Rhynochetos jubatus	Family Otididae Tetrax tetrax Otis tarda Ardeotis nigriceps Chlamydotis undulata Houbaropsis bengalensis Sypheotides indica	Order CHARADRIIFORMES Family Haematopodidae Haematopus meadewaldoi Haematopus chathamensis	Family Recurvirostridae Himantopus novaezeelandia	Family Charadriidae Chettusia gregaria Vanellus macropterus Charadrius melodus Charadrius thoracicus Charadrius sanctaehelenae Charadrius novaeseelandia	Family Scolopacidae Numenius borealis Numenius tahitiensis

Western Palearctic Bangladesh, Burma, China, Hong Kong, Japan, U.S.S.R.	Tuamotu Archipelago (France) Indonesia Indonesia New Zealand Bhutan, India, Nepal, Pakistan Asia Australia U.S.S.R., South-east Asia	India	Australia Argentina Galapagos (Ecuador) Red Sea Mediterranean, Morocco China, Mongolia, U.S.S.R., Viet Nam China, Hong Kong, Japan, Mongolia, South	Prince Edward I. (South Africa), Crozet and Kerguelen Is (France) New Zealand South Africa, Namibia China, Indonesia, Malaysia, Thailand	Japan, North Korea, South Korea, U.S.S.R.	Afghanistan, India, Iran, Pakistan, U.S.S.R.
*	> * * * × * * * * * * * * * * * * * * *	*	****	* * X X I	**	**
Slender-billed Curlew Spotted Greenshank	Tuamotu Sandpiper Sulawesi Woodcock Obi Woodcock New Zealand Snipe Wood Snipe Asian Dowitcher Cox's Sandpiper Spoon-billed Sandpiper	Jerdon's Courser	Pacific Gull Olrog's Gull Lava Gull White-eyed Gull Audouin's Gull Relict Gull Saunder's Gull	Kerguelen Tern Black-fronted Tern Damara Tern Chinese Crested Tern	Japanese Murrelet	Pale-backed Pigeon
Numenius tenuirostris Tringa guttifer	Prosobonia cancellatus Scolopax celebensis Scolopax rochussenii Coenocorypha aucklandica Gallinago nemoricola Limnodromus semipalmatus Calidris paramelanotos Eurynorhynchus pygmeus	Family Glareolidae Cursorius bitorquatus	Family Laridae Larus pacificus Larus atlanticus Larus fuliginosus Larus leucophthalmus Larus audouinii Larus relictus Larus saundersi	Sterna virgata Sterna albostriata Sterna balaenarum Sterna bernsteini	Family Alcidae Synthliboramphus wumizusume	Order COLUMBIFORMES Family Columbidae Columba eversmanni

Complia	Modeira (Dortugal)														Grenada		Colombia						Society Is, Tuamotu Archipelago (France)		Solomon Is	Marquesas (France)	Indonesia		Indonesia, Papua New Guinea		Western Samoa		Indonesia		Burma, Indonesia, Malaysia, Thailand	Indonesia
Ω	4 0	4 22	4 ×	** **	***	**	**	**	**	**	Tr.	**	**	>	Н	**	-	**	**	**	K *	K*	Н	***	**	П	K*	Ex	K*	**	>	K*	**	*	* *	4
Somali Pigeon	Madeira Laurel-pigeon	Dark-tailed Laurel-pigeon	White-tailed Laurel-pigeon	Maroon Wood-pigeon	Nilgiri Wood-pigeon	Sri Lanka Wood-pigeon	Pale-capped Wood-pigeon	Grey Wood-pigeon	Yellow-legged Wood-pigeon	Ring-tailed Wood-pigeon	Pink Pigeon	Socorro Dove	Blue-eyed Ground Dove	Purple-winged Ground Dove	Grenada Dove	Ochre-bellied Dove	Tolima Dove	Grey-headed Quail Dove	Blue-headed Quail Dove	Mindoro Bleeding-heart	Negros Bleeding-heart	Sulu Bleeding-heart	Society Islands Ground-dove	Santa Cruz Ground-dove	Thick-billed Ground-dove	Marquesas Ground-dove	Wetar Ground-dove	Solomon Island Crowned Pigeon	Scheepmaker's Crowned Pigeon	Victoria Crowned Pigeon	Tooth-billed Pigeon	Sumba Green-pigeon	Flores Green-pigeon	I mor Green-pigeon	Large Green-pigeon Red-naped Fruit-dove	
Columba oliviae	Columba trocaz	Columba bollii	Columba junoniae	Columba thomensis	Columba el phinstonii	Columba torringtoni	Columba punicea	Columba argentina	Columba pallidiceps	Columba caribaea	Nesoenas mayeri	Zenaida graysoni	Columbina cyanopis	Claravis godefrida	Leptotila wellsi	Leptotila ochraceiventris	Leptotita conoveri	Geotrygon caniceps	Starnoenas cyanocephala	Gallicolumba platenae	Gallicolumba keayı	Gallicolumba menagei	Gallicolumba erythroptera	Gallicolumba sanciaecrucis	Callicolumba salamonis	Gallicolumba rubescens	Missing modelli	Microgoura meek!	Gourg without	Doding Victoria	Diamiculus sirigirosiris	Treron floris	Tropon neithern	Treron canelloi	Ptilinopus dohertyi	

Society Is, Tuamotu Archipelago (France), Society Is, Tuamotu Archipelago (France) Guam, Northern Mariana Is (U.S.A.) Papua New Guinea, Solomon Is indonesia, Papua New Guinea New Caledonia (France) New Caledonia (France) New Caledonia (France) Christmas I. (Australia) Marquesas Is (France) Marquesas Is (France) Marquesas Is (France) Austral Is (France) New Zealand Philippines Philippines Philippines Philippines Philippines **Philippines Philippines** Philippines ndonesia Indonesia ndonesia Indonesia ndonesia ndonesia Indonesia ndonesia ndonesia Australia Australia Australia Cook Is Green-crowned Racket-tailed Parrot Red-crowned Racket-tailed Parrot Blue-headed Racket-tailed Parrot Society Islands Imperial-pigeon Slame-breasted Fruit-dove Marquesas Imperial-pigeon Christmas Imperial-pigeon Golden-shouldered Parrot New Caledonian Lorikeet Yellow-crested Cockatoo Salmon-crested Cockatoo Mindoro Imperial-pigeon Spotted Imperial-pigeon Antipodes Island Parrot Cloven-feathered Dove sland Imperial-pigeon Giant Imperial-pigeon Blue-fronted Lorikeet Red-vented Cockatoo Marquesas Fruit-dove Ultramarine Lorikeet Marianas Fruit-dove Red-and-blue Lory Purple-naped Lory Vegros Fruit-dove Streaked Lorikeet Fanimbar Corella Rapa Fruit-dove **Vulturine Parrot** White Cockatoo Paradise Parrot Tahiti Lorikeet Hooded Parrot 3iak Red Lory Order PSITTACIFORMES Dsephotus chrysopterygius Drepanoptila holosericea Charmosyna multistriata Cacatua haematuropygia Psephotus pulcherrimus Cyanoramphus unicolor Ptilinopus roseicapilla Prioniturus luconensis Charmosyna diadema Prioniturus montanus Family Psittacidae Psephotus dissimilis Charmosyna toxopei Cacatua moluccensis Prioniturus discurus Psittrichas fulgidus Ptilinopus mercierii Ducula mindorensis Cacatua sulphurea ptilinopus marchei Ptilinopus arcanus Ducula pistrinaria Ptilinopus huttoni Vini ultramarina Lorius domicella Cacatua goffini Ducula whartoni Eos cyanogenia Ducula galeata Ducula aurorae Ducula goliath Vini peruviana Ducula carola Cacatua alba Eos histrio

New Zealand	Australia	Australia	Australia	Zambia	Indonesia	Indonesia	India	Nicobar Is (India)	Mauritius	Bolivia, Brazil, Paraguay	Argentina, Brazil, Paraguay, Uruguay	Brazil	Brazil	Bolivia	Bolivia	Argentina, Brazil, Paraguay	Brazil	Cuba	Brazil	Colombia, Ecuador, Peru	Colombia, Ecuador	Mexico	Mexico	Brazil	Brazil	Brazil	Ecuador	Colombia	Chile	Colombia	Ecuador, Peru	Brazil	Brazil	Colombia, Ecuador	Argentina, Brazil, Paraguay	Colombia, Ecuador, Venezuela	Puerto Rico
щĸ	K	ш	Н	2	*	*	*	*	ш	*	Ex	щ	ш	_	*	*	>	*	*	*	>	>	щ	2	*	*	*	*	*	_	*	8	Н	*	*	*	ш
Orange-fronted Parakeet	Scarlet-chested Parakeet	Ground Parrot	Night Parrot	Black-cheeked Lovebird	Wallace's Hanging Parrot	Sangihe Hanging Parrot	Rothschild's Parakeet	Nicobar Parakeet	Mauritius Parakeet	Hyacinth Macaw	Glaucous Macaw	Indigo Macaw	Little Blue Macaw	Blue-throated Macaw	Red-fronted Macaw	Blue-winged Macaw	Golden Conure	Cuban Conure	Golden-capped Conure	Golden-plumed Conure	Yellow-eared Conure	Thick-billed Parrot	Maroon-fronted Parrot	Blue-throated Conure	Pearly Conure	Yellow-sided Conure	White-necked Conure	Brown-breasted Conure	Slender-billed Conure	Rufous-fronted Parakeet	Grey-cheeked Parakeet	Brown-backed Parrotlet	Golden-tailed Parrotlet	Spot-winged Parrotlet	Pileated Parrot	Rusty-faced Parrot	Puerto Rican Amazon
Cyanoramphus malherbi Neophema chrysogaster	Neophema splendida	Pezoporus wallicus	Geopsittacus occidentalis	Agapornis nigrigenis	Loriculus flosculus	Loriculus catamene	Psittacula intermedia	Psittacula caniceps	Psittacula eques	Anodorhynchus hyacinthinus	Anodorhynchus glaucus	Anodorhynchus leari	Cyanopsitta spixii	Ara glaucogularis $(=A, caninde)$	Ara rubrogenys	Ara maracana	Aratinga guarouba	Aratinga euops	Aratinga auricapilla	Leptosittaca branickii	Ognorhynchus icterotis	Rhynchopsitta pachyrhyncha	Rhynchopsitta terrisi	Pyrrhura cruentata	Pyrrhura perlata	Pyrrhura hypoxantha	Pyrrhura albipectus	Pyrrhura calliptera	Enicognathus leptorhynchus	Bolborhynchus ferrugineifrons	Brotogeris pyrrhopterus	Touit melanonota	Touit surda	Touit stictoptera	Pionopsitta pileata	Hapalopsittaca amazonina	Amazona vittata

Argentina, Brazil, Paraguay, Uruguay Mexico Brazil Brazil Brazil Netherlands Antilles, Venezuela Argentina, Brazil, Paraguay St. Lucia Dominica St. Vincent Dominica Brazil New Zealand	Cameroon Ethiopia	Indonesia Costa Rica India, Sri Lanka Colombia, Ecuador Indonesia, Malaysia Madagascar Sri Lanka Philippines	Madagascar Indonesia Indonesia Indonesia Papua New Guinea Burundi, Zaire
> X □ X X X X □ □ □ □ □ X □ X □ X X X X	日民	*****	- x x x x x -
Red-spectacled Amazon Red-tailed Amazon Red-tailed Amazon Red-browed Amazon Yellow-faced Amazon Yellow-shouldered Amazon Vinaceous Amazon St. Lucia Amazon St. Vincent Amazon Imperial Amazon Kakapo	Bannerman's Turaco Prince Ruspoli's Turaco	Green-cheecked Bronze Cuckoo Cocos Cuckoo Red-faced Malkoha Banded Ground Cuckoo Sunda Ground Cuckoo Snail-eating Coua Green-billed Coucal Steere's Coucal	Madagascar Red Owl Taliabu Owl Minahassa Owl Lesser Masked Owl Golden Owl Itombwe Owl
Amazona pretrei Amazona viridigenalis Amazona brasiliensis Amazona rhodocorytha Amazona barbadensis Amazona vinacea Amazona versicolor Amazona arausiaca Amazona guildingii Amazona imperialis Triclaria malachitacea	Order CUCULIFORMES Family Musophagidae Tauraco bannermani Tauraco ruspolii	Family Cuculidae Chrysococcyx rufomerus Coccyzus ferrugineus Phaenicophaeus pyrrhocephalus Neomorphus radiolosus Carpococcyx radiceus Coua delalandei Centropus chlororhynchus Centropus steerii Centropus nigrorufus	Order STRIGIFORMES Family Tytonidae Tyto soumagnei Tyto nigrobrunnea Tyto inexspectata Tyto sororcula Tyto aurantia Phodilus prigoginei

K* Burma, Indonesia, Malaysia, Thailand E Kenya K* Indonesia K* Indonesia K* Philippines Comoro Is R Saychelles R Tanzania K* Philippines K Tanzania K* Philippines K Tanzania K West Africa R West Africa K West Africa K West Africa K China, Japan, U.S.S.R. K West Africa K China, China, Caire Ex New Zealand I India K* China	 K* Indonesia, Malaysia K* Brazil, Colombia, Ecuador, Guyana, Paraguay, Peru, Venezuela K* Brazil K* Colombia, Ecuador, Guyana, Peru K* Jamaica R Puerto Rico K* Brazil, Paraguay K* Venezuela K* Spain, Portugal, West Africa K* China K* Indonesia
White-fronted Scops-owl Sokoke Scops-owl Sumatran Scops-owl Javan Scops-owl Flores Scops-owl Mindoro Scops-owl Grand Comoro Scops-owl Seychelles Scops-owl Seychelles Scops-owl Sao Tomé Scops-owl Usambara Eagle-owl Philippine Eagle-owl Blakiston's Fish-owl Rufous Fishing Owl Albertine Owlet Laughing Owl Forest Owlet	Dulit Frogmouth Long-tailed Potoo White-winged Potoo Rufous Potoo Rufous Potoo Satanic Nightjar Jamaican Least Pauraque Prerto Rican Nightjar White-winged Nightjar Roraiman Nightjar Pygmy Nightjar Red-necked Nightjar Red-necked Nightjar Vaurie's Nightjar
Family Strigidae Otus sagittatus Otus ireneae Otus stresemanni Otus angelinae Otus alfredi Otus mindorensis Otus mantlaui Otus hartlaubi Bubo vosseleri Bubo philippensis Ketupa blakistoni Scotopelia ussheri Glaucidium albertinum Sceloglaux albifacies Athene blewitti	Order CAPRIMULGIFORMES Family Podargidae Batrachostomus harterti Family Nyctibiidae Nyctibius aethereus Nyctibius bracteatus Nyctibius bracteatus Eurostopodus diabolicus Siphonorhis americanus Caprimulgus candicans Caprimulgus whitelyi Caprimulgus hirundinaceus Caprimulgus centralasicus Caprimulgus pulchellus

Macropsalis creagra Eleothreptus anomalus Order APODIFORMES Family Apodidae Cypseloides lemosi Hydrochous gigas Collocalia elaphra Aerodramus sawtelli Schoutedenapus schoutedeni Apus sladeniae Apus scuticauda Family Trochilidae Glaucis dohrnii Threnetes niger Phaethornis idaliae Campylopterus ensipennis Campylopterus villaviscensio Avocettula recurvirostris Popelairia letitiae Amazilia distans Amazilia distans Amazilia doucardi Amazilia castaneiventris Eupherusa poliocerca Eupherusa cyanophrys	Long-trained Nightjar Sickle-winged Nightjar Sickle-winged Nightjar White-chested Swift Giant Swiftlet Tahiti Swiftlet Atiu Swiftlet Atiu Swiftlet Atiu Swiftlet Actiu Swiftlet Atiu Swiftlet Antiu Swiftlet	**	Argentina, Brazil Argentina, Brazil, Paraguay, Uruguay Colombia Indonesia, Malaysia Seychelles Society Is (France) Cook Is Zaire Angola, Cameroon, Fernando Po (Equatorial Guinea), Nigeria India India Brazil French Guiana Brazil Golombia Honduras Venezuela Colombia Honduras Venezuela Costa Rica Colombia Mexico Colombia
Phlogophilus hemileucurus Phlogophilus harterti Heliodoxa gularis Hylonympha macrocerca Aglaeactis aliciae Coeligena prunellei	Ecuadorean Piedtail Peruvian Piedtail Pink-throated Brillant Scissor-tailed Hummingbird Purple-backed Sunbeam Black Inca	* * * * * *	Ecuador Peru Ecuador, Peru Venezuela Peru Colombia

K* Juan Fernandez Is (Chile) K* Ecuador, Peru K* Ecuador K* Colombia K* Colombia, Ecuador K* Brazil K* Brazil K* Brazil K* Brazil K* Peru	 K* Mexico, U.S.A. K* Costa Rica, Panama K* Bhutan, Burma, China, India, Nep. Nam K* Philippines K* Indonesia K* Papua New Guinea K* Tuamotu Archipelago (France) K* Marquesas Is (France) K* Papua New Guinea
Juan Fernandez Firecrown Purple-throated Sunangel Royal Sunangel Black-breasted Puffleg Turquoise-throated Puffleg Colourful Puffleg Black-thighed Puffleg Hoary Puffleg Neblina Metaltail Violet-throated Metaltail Grey-bellied Comet Hyacinth Visorbearer Hooded Visorbearer Marvellous Spatuletail Bee Hummingbird Chilean Woodstar Little Woodstar Esmeraldas Woodstar Glow-throated Hummingbird	Resplendent Quetzal Eared Trogon Baird's Trogon Blyth's Kingfisher Jungle Kingfisher Lazuli Kingfisher Lazuli Kingfisher Cinnamon-banded Kingfisher Mangaia Kingfisher Tuamotu Kingfisher Marquesas Kingfisher Marquesas Kingfisher
Sephanoides fernandensis Heliangelus viola Heliangelus regalis Eriocnemis nigrivestris Eriocnemis godini Eriocnemis godini Eriocnemis derbyi Haplophaedia lugens Metallura baroni Taphrolesbia griseventris Augastes scutatus Augastes lumachellus Loddigesia mirabilis Calypte helenae Eulidia yarrellii Acestrura bombus Acestrura berlepschi	Order TROGONIFORMES Family Trogonidae Pharomachrus mocinno Euptilotis neoxenus Trogon bairdii Order CORACIIFORMES Family Alcedinidae Alcedo hercules Alcedo hercules Halcyon winchelli Halcyon australasia Halcyon australasia Halcyon gambieri Halcyon gambieri Halcyon godeffroyi Halcyon bougainvillei

Philippines Indonesia	Central America	Madagascar Madagascar Madagascar Madagascar	Burma, India, Laos, Thailand, Viet Nam Bhutan, Burma, India, Kampuchea, Laos,	Nepal, I hailand, Viet Nam Burma, Indonesia, Malaysia, Thailand Andaman Is (India) Indonesia Philippines Burma, Indonesia, Malaysia, Thailand	Brazil	Colombia Colombia, Ecuador Indonesia Zambia	Cameroon, Ghana, Liberia	Peru	
* *	**	***	* *	****	**	* > * -	×	**	
Blue-capped Wood Kingfisher Biak Paradise Kingfisher	Keel-billed Motmot	Short-legged Ground Roller Scaly Ground Roller Rufous-headed Ground Roller Long-tailed Ground Roller	Brown Hornbill Rufous-necked Hornbill	Plain-pouched Hornbill Narcondam Hornbill Sumba Hornbill Sulu Hornbill Helmeted Hornbill	Three-toed Jacamar	White-mantled Barbet Toucan Barbet Black-banded Barbet White-chested Tinkerbird	Yellow-footed Honeyguide	Yellow-browed Toucanet	
Halcyon hombroni Tanysiptera riedelii	Family Momotidae Electron carinatum	Family Coraciidae Brachypteracias leptosomus Brachypteracias squamiger Atelornis crossleyi Uratelornis chimaera	Family Bucerotidae Ptilolaemus tickelli Aceros nipalensis	Aceros subruficollis Aceros narcondami Rhyticeros everetti Anthracoceros montani Rhinoplax vigil	Family Galbulidae Jacamaralcyon tridactyla	Family Capitonidae Capito hypoleucus Semnornis ramphastinus Megalaima javensis Pogoniulus makawai	Family Indicatoridae Melignomon eisentrauti	Family Ramphastidae Aulacorhynchus huallagae	

	Peru	U.S.A.	Argentina, Brazil, Paraguay	Argentina, Paraguay	Argentina, Brazil, Paraguay	Cuba, U.S.A.	Mexico	Laos, Viet Nam	Japan			Uganda, Zaire	, ,		Brazil			Peru	Chile	Peru	Brazil	Peru	Brazil, Ecuador, Peru	Peru	Argentina, Chile	Peru	Venezuela	Brazil	Peru	Argentina, Brazil, Paraguay	Venezuela	Argentina, Brazil	Brazil	Brazil, Paraguay	Ecuador, Peru
i	* :	>	ы ;	* .	*	ш	ш	*	田			×	**		*		*	*	*	K*	*	*	*	*	*	*	*	**	*	*	*	*	*	*	*
	Speckle-chested Piculet	Ked-cockaded Woodpecker	Helmeted Woodpecker	Black-bodied Woodpecker	Robust Woodpecker	Ivory-billed Woodpecker	Imperial Woodpecker	Red-collared Woodpecker	Okinawa Woodpecker			African Green Broadbill	Wattled Broadbill		Snethlage's Woodcreeper		White-bellied Cinclodes	Stout-billed Cinclodes	Masafuera Rayadito	White-browed Tit Spinetail	Plain Spinetail	Apurimac Spinetail	Chestnut-throated Spinetail	Russet-bellied Spinetail	Austral Canastero	Line-fronted Canastero	Orinoco Softtail	Striated Softtail	Chestnut-backed Thornbird	Canebrake Groundcreeper	White-throated Barbtail	White-browed Foliage-gleaner	Alagoas Foliage-gleaner	Russet-mantled Foliage-gleaner	Rufous-necked Foliage-gleaner
Family Picidae	Picumnus steindachneri	Picoides borealis	Dryocopus galeatus	Dryocopus schulzi	Campephilus robustus	Campephilus principalis	Campephilus imperialis	Picus rabieri	Sapheopipo noguchii	Order BASSEDIEODMES	Fomily Furviolmidae	Pseudocalvntomena oraneri	Eurylaimus steeri	Family Dendrocolaptidae	Xiphocolaptes franciscanus	Family Furnariidae	Cinclodes palliatus	Cinclodes aricomae	Aphrastura masafuerae	Leptasthenura xenothorax	Synallaxis infuscata	Synallaxis courseni	Synallaxis cherriei	Synallaxis zimmeri	Asthenes anthoides	Asthenes urubambensis	Thripophaga cherriei	Thripophaga macroura	Phacellodomus dorsalis	Phacellodomus dendrocolaptoides	Margarornis tatei	Philydor amaurotis	Philydor novaesi	Philydor dimidiatus	Automolus ruficollis .

Colombia, Venezuela

Brazil

Brazil Brazil

Brazil

Argentina, Brazil Ecuador, Peru

Ecuador, Peru

Brazil

Brazil

Automolus rectirostris Automolus erythrocephalus Megaxenops parnaguae	Chestnut-capped Foliage-gleaner Henna-hooded Foliage-gleaner Great Xenops	* * * *
Family Formicariidae	White-bearded Antshrike	**
Thamnophilus praecox	Cocha Antshrike	K*
Clytoctantes alixii	Recurve-billed Bushbird	K* (
Thamnomanes plumbeus	Plumbeous Antshrike	K*
Myrmotherula klagesi	Klages's Antwren	K*
Myrmotherula erythronotos	Black-hooded Antwren	E
Myrmotherula minor	Salvadori's Antwren	K*
Myrmotherula grisea	Ashy Antwren	**
Herpsilochmus pileatus	Black-capped Antwren	_ K*
Herpsilochmnus parkeri	Ash-throated Antwren	*
Formicivora iheringi	Narrow-billed Antwren	>
Drymophila genei	Rufous-tailed Antbird	**
Terenura sharpei	Yellow-rumped Antwren	**
Terenura sicki	Orange-bellied Antwren	* *
Cercomacra brasiliana	Rio de Janeiro Antbird	**
Cercomacra carbonaria	Rio Branco Antbird	**
Pyriglena atra	Fringe-backed Fire-eye	Щ
Rhopornis ardesiaca	Slender Antbird	>
Myrmeciza ruficauda	Scalloped Antbird	**
Myrmeciza griseiceps	Grey-headed Antbird	*
Myrmeciza stictothorax	Spot-breasted Antbird	*
Rhegmatorhina gymnops	Bare-eyed Antbird	* *
Formicarius rufifrons	Rufous-fronted Antthrush	* *
Grallaria gigantea	Giant Antpitta	**
Grallaria excelsa	Great Antpitta	**
Grallaria alleni	Moustached Antpitta	-
Grallaria chthonia	Tachira Antpitta	**
Grallaria rufocinerea	Bicolored Antpitta	* *
Grallaria milleri	Brown-banded Antpitta	ı
Grallaricula loricata	Scallop-breasted Antpitta	* *
Grallaricula cucullata	Hooded Antpitta	*

Bolivia, Peru

Brazil

Brazil Brazil Brazil Brazil Brazil

Brazil

Peru

Brazil

Bolivia

Brazil

Colombia, Venezuela

Brazil

*

Hooded Gnateater

Family Conopophagidae

Conopophaga roberti

Venezuela

Colombia, Ecuador

Venezuela

Venezuela Colombia

Colombia Colombia

Ecuador, Peru

Brazil

Brazil

Peru

Brazil Brazil	Bolivia, Brazil, Colombia, Ecuador, Peru	Brazil Brazil Peru	Brazil Brazil Brazil Costa Rica. Panama	Brazil Brazil Costa Rica, Panama	Colombia, Ecuador, Panama Costa Rica, Panama Colombia, Ecuador	Argentina, Brazil Brazil	Argentina, Bolivia, Chile, Ecuador, Peru Argentina, Brazil, Paraguay, Uruguay Guatemala, Mexico	Brazil Brazil Arcentina Brazil Paracuay	Venezuela Bolivia, Peru	Argentina, Bolivia, Brazil, Paraguay Argentina, Bolivia, Brazil, Colombia, Guyana, Paraguay, Suriname, Venezuela
H H	**	* * * *	* - * *	× < <	* * >	* *	***	* * *	***	** **
Stresemann's Bristlefront Brasilia Tapaculo	Shrike-like Cotinga	Grey-winged Cotinga Black-headed Berryeater White-cheeked Cotinga	Buff-throated Purpletuft Kinglet Cotinga Cinnamon-vented Piha Turonoise Cotinga	Banded Cotinga White-winged Cotinga Yellow-billed Cotinga	White Cotinga Bare-necked Umbrellabird Long-wattled Umbrellabird	Black-capped Manakin Golden-crowned Manakin	White-tailed Shrike Tyrant Strange-tailed Tyrant Belted Flycatcher	Fork-tailed Pygmy Tyrant Kaempfer's Tody Tyrant Southern Brisele Tyrant	Venezuelan Bristle Tyrant	Sharp-tailed Tyrant Bearded Tachuri
Family Rhinocryptidae Merulaxis stresemanni Scytalopus novacapitalis	Family Cotingidae Laniisoma elegans	Ti juca condita Carpornis melanocephalus Ampelion stresemanni	Iodopleura pipra Calyptura cristata Lipaugus lanioides Coimea ridomavi	Cotinga maculata Xipholena atropurpurea Carpodectes antoniae	Carpodectes hopkei Cephalopterus glabricollis Cephalopterus penduliger	Family Pipridae Piprites pileatus Pipra vilasboasi	Family Tyrannidae Agriornis albicauda Yetapa risoria Xenotriccus calizonus	Ceratotriccus furcatus Idioptilon kaempferi Poconotriccus eximius	Pogonotriccus venezuelanus Anairetes alninus	Culicivora caudacuta Polystictus pectoralis

Brazil Brazil Brazil, Paraguay Brazil Venezuela Brazil, Paraguay Costa Rica, Nicaragua Ecuador, Peru Argentina, Bolivia, Brazil, Paraguay	Peru	Indonesia Philippines Kampuchea, Laos, Viet Nam Burma, Thailand Indonesia China, Japan, Korea, Borneo, Taiwan,	Indochina Manus I. (Papua New Guinea) Papua New Guinea, Solomon Is	New Zealand	Madagascar	Australia Australia	Somalia Ethiopia Somalia Ethiopia
*******	**	******	* *	Щ	н	及臣	$\bowtie \bowtie \vdash \vdash$
Grey-backed Tachuri Minas Gerais Tyrannulet Sao Paulo Tyrannulet Long-tailed Tyrannulet Short-tailed Tody Flycatcher Russet-winged Spadebill Tawny-chested Flycatcher Grey-breasted Flycatcher	Peruvian Plantcutter	Schneider's Pitta Whiskered Pitta Bar-bellied Pitta Gurney's Pitta Blue-headed Pitta Fairy Pitta	Superb Pitta Solomon Islands Pitta	New Zealand Bush Wren	Yellow-bellied Sunbird-asity	Rufous Scrub-bird Noisy Scrub-bird	Ash's Lark Degodi Lark Somali Long-clawed Lark Sidamo Long-clawed Lark
Polystictus superciliaris Phylloscartes roquettei Phylloscartes paulistus Phylloscartes ceciliae Todirostrum viridanum Platyrinchus leucoryphus Aphanotriccus capitalis Empidonax griseipectus Alectrurus tricolor	Family Phytotomidae Phytotoma raimondii	Family Pittidae Pitta schneideri Pitta kochi Pitta ellioti Pitta gurneyi Pitta baudi	Pitta superba Pitta anerythra	Family Acanthisittidae Xenicus longipes	Family Philepittidae Neodrepanis hypoxantha	Family Atrichornithidae Atrichornis rufescens Atrichornis clamosus	Family Alaudidae Mirafra ashi Mirafra degodiensis Heteromirafra archeri Heteromirafra sidamoensis

I Lesotho, South Africa, Swaziland I South Africa E Raso (Cape Verde Is)	I Thailand K* Bahama Is R Ethiopia K* Sudan	V Kenya, Tanzania K* Lesotho, South Africa K* Argentina, Paraguay K* Argentina, Brazil, Paraguay	 V Mauritius V Réunion (France) K* Philippines K* Philippines V West Africa 	K* Indonesia K* Liberia V Zaire R Madagascar R Madagascar R West Africa K* Philippines V Mauritius	I Angola I Cameroon R Cameroon, Niger R Tanzania
South African Long-clawed Lark Botha's Lark Raso Lark	White-eyed River Martin Bahama Swallow White-tailed Swallow Red Sea Cliff Swallow	Sokoke Pipit Yellow-breasted Pipit Chaco Pipit Ochre-breasted Pipit	Mauritius Cuckoo-shrike Reunion Cuckoo-shrike Blackish Cuckoo-shrike White-winged Cuckoo-shrike Western Wattled Cuckoo-shrike	Wattled Bulbul Spot-winged Bulbul Prigogine's Greenbul Appert's Greenbul Grey-crowned Greenbul Yellow-throated Olive Greenbul Mottled-breasted Bulbul	Gabela Helmet-shrike Mount Kupe Bush-shrike Green-breasted Bush-shrike Uluguru Bush-shrike
Heteromirafra ruddi Spizocorys fringillaris Alauda razae	Family Hirundinidae Pseudochelidon sirintarae Callichelidon cyaneoviridis Hirundo megaensis	Family Motacillidae Anthus sokokensis Anthus chloris Anthus chacoensis Anthus nattereri	Family Campephagidae Coracina typica Coracina newtoni Coracina coerulescens Coracina ostenta Campephaga lobata	Family Pycnonotidae Pycnonotus nieuwenhuisi Pycnonotus leucolepis Chlorocichla prigoginei Phyllastrephus apperti Phyllastrephus tenebrosus Phyllastrephus cinereiceps Criniger olivaceus Hypsipetes siquijorensis	Family Laniidae Prionops gabela Malaconotus kupeensis Malaconotus gladiator Malaconotus alius

Angola, Cameroon Sao Tomé	Madagascar Madagascar	Argentina	Mexico Colombia Cuba Colombia Mexico	Mexico Martinique, St. Lucia	China, India Mozambique, Tanzania, Zimbabwe Angola Kenya, Mozambique, Tanzania China, Malaysia China, Thailand Angola, Zaire Mozambique, Tanzania Tanzania Malawi, Mozambique Seychelles Philippines Philippines China, India, Laos, Nepal, Thailand, Viet Nam Indonesia
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Monteiro's Bush-shrike Sao Tomé Fiscal Shrike	Van Dam's Vanga Pollen's Vanga	Rufous-throated Dipper	Slender-billed Wren Apolinar's Wren Zapata Wren Niceforo's Wren Clarion Wren	Socorro Mockingbird White-breasted Thrasher	Rusty-bellied Shortwing Swynnerton's Forest Robin Gabela Akalat East Coast Akalat Rufous-headed Robin Black-throated Robin White-headed Robin-chat Dappled Mountain Robin Usambara Ground Robin Iringa Ground Robin Thyolo Alethe Seychelles Magpie-robin Black Shama Luzon Redstart Blue-fronted Robin
Malaconotus monteiri Lanius newtoni	Family Vangidae Xenopirostris damii Xenopirostris polleni	Family Cinclidae Cinclus schulzi	Family Troglodytidae Hylorchilus sumichrasti Cistothorus apolinari Ferminia cerverai Thryothorus nicefori Troglodytes tanneri	Family Mimidae Mimodes graysoni Ramphocinclus brachyurus	Family Muscicapidae Brachypteryx hyperythra Swynnertonia swynnertoni Sheppardia gabela Sheppardia gunningi Erithacus ruficeps Erithacus ruficeps Cossypha heinrichi Modulatrix orostruthus Dryocichloides montanus Dryocichloides lowei Alethe choloensis Copsychus sechellarum Copsychus cebuensis Rhyacornis bicolor Cinclidium frontale

3razil, Ecuador, Guyana, Peru, Venezuela East Africa, South Africa, Zaire China, India, Mongolia, Nepal 3urma, China, India, Thailand North Yemen, Saudi Arabia Hawaiian Is (U.S.A.) Hawaiian Is (U.S.A.) Hawaiian Is (U.S.A.) ndonesia, Malaysia indonesia, Malaysia 3angladesh, India Canary Is (Spain) ndia, Pakistan Madagascar Madagascar Solomon Is Philippines hilippines Philippines Philippines Philippines Viet Nam Sri Lanka ndonesia Sri Lanka ndonesia ndonesia ndonesia ndonesia ndonesia ndonesia ndonesia Thailand Uganda Kenya apan ndia Laos Rusty-throated Wren-babbler Short-tailed Scimitar-babbler Sri Lanka Whistling-thrush Fuerteventura Stonechat Rufous-brown Solitaire White-browed Bushchat White-breasted Babbler Orange-banded Thrush Spotted Ground-thrush Bornean Wren-babbler Fawn-breasted Thrush Black-browed Babbler Kibale Ground-thrush Rabor's Wren-babbler Striated Wren-babbler Miniature Tit-babbler Forest Ground-thrush Benson's Rockthrush San Cristobal Thrush Slaty-backed Thrush Spot-winged Thrush Hodgson's Bushchat Red-backed Thrush Grey-sided Thrush Deignan's Babbler Everett's Thrush Bagobo Babbier Striped Babbler Amami Thrush Marsh Babbler Yemen Thrush Sooty Babbler lavan Cochoa Taita Thrush Geomalia Olomao Puaiohi Kamao Trichastoma perspicillatum Ptilocichla leucogrammica Spelaeornis badeigularis Micromacronus leytensis otilocichla mindanensis Myadestes myadestinus Saxicola macrorhyncha Stachyris grammiceps Wyadestes leucogenys Zoothera margaretae Myadestes lanaiensis Zoothera erythronota Pellorneum palustre "urdus oberlaenderi urdus menachensis Iabouilleia dan joui Stachyris rodolphei Zoothera schistacea Zoothera spiloptera Myadestes palmeri Myiophoneus blighi Stachyris herberti Leonardina woodi Geomalia heinrichi Vapothera rabori Monticola bensoni urdus kibalensis Saxicola dacotiae Zoothera machiki Stachyris striata Saxicola insignis Zoothera everetti Zoothera amami Zoothera peronii urdus fischeri urdus helleri Cochoa azurea urdus feae

Garrulax cinereifrons

Garrulax milleti Garrulax maesi

Turdoides hindei

Moupinia altirostris

Burundi, Kenya, Rwanda, Uganda, Zaire, Cameroon, Equatorial Guinea, Gabon, Bhutan, Burma, China, India, Laos, Western Palearctic, southern Africa Burundi, Rwanda, Uganda, Zaire China, India, Nepal, Pakistan Bangladesh, China, India Burma, India, Pakistan Socotra (South Yemen) Rodrigues (Mauritius) Hawaiian Is (U.S.A.) India, Burma, China Aldabra (Seychelles) Cameroon, Nigeria Cameroon, Gabon China, Viet Nam Laos, Viet Nam China, U.S.S.R. China, Laos Madagascar West Africa Solomon Is Viet Nam Seychelles Viet Nam Viet Nam Viet Nam Sri Lanka Sri Lanka Zambia Nigeria Kenya Nauru China China China China India Cuba White-throated Mountain Babbler Greater Rufous-headed Parrotbill Yellow-throated Laughingthrush White-speckled Laughingthrush White-cheeked Laughingthrush 3lack-hooded Laughingthrush Ashy-headed Laughingthrush Red-winged Laughingthrush Large-billed Bush Warbler White-necked Picathartes Collared Laughingthrush Slack-breasted Parrotbill Grey-necked Picathartes Grauer's Swamp Warbler Madagascar Yellowbrow Papyrus Yellow Warbler Sri Lanka Bush Warbler Kolombangara Warbler Grey-crowned Crocias Vilgiri Laughingthrush Gold-fronted Fulvetta **Eye-browed Parrotbill** Grey Laughingthrush Hinde's Pied Babbler Omei Shan Liocichla **Suban Gnatcatcher** Dja River Warbler Rodrigues Warbler erdon's Moupinia Sevchelles Warbler Speckled Warbler Aquatic Warbler Aldabra Warbler Socotra Cisticola Nauru Warbler Nihoa Warbler Picathartes gymnocephalus Acrocephalus sorghophilus Acrocephalus sechellensis Acrocephalus rodericanus Paradoxornis flavirostris Acrocephalus paludicola Chloropeta gracilirostris Acrocephalus familiaris Crosslevia xanthophrys

Paradoxornis heudei

Bradypterus palliseri

Acrocephalus rehsei

Bradypterus grandis

Bradypterus major

Bradypterus graueri

Polioptila lembeyei

Picathartes oreas

Paradoxornis ruficeps

Alcippe variegaticeps

Crocias langbianis

Lioptilus gilberti

Liocichla omeiensis

Garrulax formosus

Garrulax yersini

Garrulax cachinnans

Garrulax galbanus

Garrulax bieti

Garrulax vassali

Phylloscopus amoenus

Cisticola haesitata

Nesillas aldabranus

Kenya Cameroon, Chad, Nigeria	India, Pakistan	Kenya, Malawi, Mozambique, Tanzania	Burundi, Rwanda, Tanzania, Zaire	Zaire	Mozambique, Tanzania	Tanzania	Kenya, Uganda, Zaire	Angola	Sao Tomé	India, Nepal	China, Japan	Papua New Guinea	Solomon Is, Vanuatu	Fiji	Australia	Australia	Australia	Australia	Australia	Australia	Australia	Australia	Ivory Coast, Liberia	Indonesia	China, India, Indonesia, Malaysia	Indonesia	Philippines	Philippines	Indonesia	Indonesia	Philippines	Indonesia	Indonesia	Indonesia	indonesia	Philippines
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Tana River Cisticola River Prinia	Long-tailed Prinia	White-Winged Apalis	Kungwe Apalis	Kabobo Apalis	Long-billed Apalis	Mrs Moreau's Warbler	Turner's Eremomela	Pulitzer's Longbill	Sao Tomé Short-tail	Bristled Grass Warbler	Marshland Warbler	Fly River Grassbird	Whitney's Thicket Warbler	Long-legged Warbler	Purple-crowned Fairy-wren	Thick-billed Grass-wren	Eyrean Grass-wren	Grey Grass-wren	Carpentarian Grass-wren	Eastern Bristlebird	Western Bristlebird	Chestnut-breasted Whiteface	Nimba Flycatcher	Streaky-breasted Jungle-flycatcher	Brown-chested Jungle-flycatcher	Henna-tailed Jungle-flycatcher	White-throated Jungle-flycatcher	White-browed Jungle-flycatcher	Lompobattang Flycatcher	Sumba Flycatcher	Cryptic Flycatcher	Damar Blue Flycatcher	Black-banded Flycatcher	Matinan Flycatcher	Rueck's Blue Flycatcher	Blue-breasted Flycatcher
Cisticola restricta Prinia fluviatilis	Prinia burnesi	Apalis charlessa	Apalis argentea	Apalis kaboboensis	Apalis moreaui	Bathmocercus winifredae	Eremomela turneri	Macrosphenus pulitzeri	Amaurocichla bocagii	Chaetornis striatus	Megalurus pryeri	Megalurus albolimbatus	Cichlornis whitneyi	Trichocichla rufa	Malurus coronatus	Amytornis textilis	Amytornis goyderi	Amytornis barbatus	Amytornis dorotheae	Dasyornis brachypterus	Dasyornis longirostris	Aphelocephala pectoralis	Melaenornis annamarulae	Rhinomyias addita	Rhinomyias brunneata	Rhinomyias colonus	Rhinomyias albigularis	Rhinomyias insignis	Ficedula bonthaina	Ficedula harterti	Ficedula crypta	Ficedula henrichi	Ficedula timorensis	Cyornis sandfordi	Cyornis ruecki	Cyornis herioti

Federated States of Micronesia (U.S.A.) Chatham Is (New Zealand) Kenya, Zaire, Uganda Marquesas Is (France) Papua New Guinea Society Is (France) Corsica (France) Guam (U.S.A.) New Zealand Madagascar Philippines Philippines Solomon Is Comoro Is Cameroon Seychelles Indonesia ndonesia ndonesia ndonesia Viet Nam Indonesia ndonesia ndonesia ndonesia ndonesia ndonesia Cook Is Taiwan Algeria Burma China India Seychelles Black Paradise-flycatcher Chatham Island Black Robin Grand Comoro Flycatcher White-browed Nuthatch 3lack-chinned Monarch Black-masked Nuthatch rellow-billed Nuthatch Short-crested Monarch White-tipped Monarch Versicolour Flycatcher Fawny-backed Fantail Sangihe Shrike-thrush White-tailed Monarch Biak Black Flycatcher Red-tailed Newtonia Rarotonga Flycatcher Caerulean Flycatcher New Zealand Thrush Chapin's Flycatcher Marquesas Monarch Banded Wattle-eye St. Matthias Fantail Vogelkop Whistler Corsican Nuthatch Algerian Nuthatch Celestial Monarch White-winged Tit Rennell Shrikebill Guam Flycatcher Fahiti Monarch Flores Monarch ruk Monarch Biak Monarch Yellow Tit Colluricincla sanghirensis Humblotia flavirostris Eutrichomyias rowleyi Clytorhynchus hamlini Monarcha sacerdotum Pachycephala meyeri Hypothymis coelestis Platysteira laticincta Hypothymis helenae Mayrornis versicolor Rhipidura superflua Newtonia fanovanae Terpsiphone corvina Monarcha boanensis Rhipidura matthiae Pomarea dimidiata Pomarea mendozae Metabolus rugensis Monarcha leucurus Myiagra freycineti Turnagra capensis Monarcha brehmii Family Paridae Family Sittidae Monarcha everetti Sitta yunnanensis Muscicapa lendu Petroica traversi Sitta whiteheadi Pomarea nigra Parus nuchalis Sitta solangiae Myiagra atra Sitta victoriae Sitta ledanti Parus holsti

Burma, China, Thailand Bhutan, Burma, China, India, Laos, Viet Nam	Philippines	Indonesia, Malaysia Sri Lanka Australia	Tanzania Kenya, Tanzania Sao Tomé Indonesia . Zaire Zaire Tanzania	Indonesia, Malaysia Papua New Guinea Indonesia Solomon Is Solomon Is Loyalty Is (France) Norfolk I. (Australia) Loyalty Is (France) Seychelles Bioko (Equatorial Guinea) Principe (Sao Tomé) Comoro Is Mauritius Solomon Is Federated States of Micronesia (U.S.A.)
* *	**	* * *	以及 	*******
Giant Nuthatch Beautiful Nuthatch	Long-billed Rhabdornis	Brown-backed Flowerpecker Legge's Flowerpecker Forty-spotted Pardalote	Banded Green Sunbird Amani Sunbird Giant Sunbird Apricot-breasted Sunbird Rockefeller's Sunbird Marungu Sunbird Rufous-winged Sunbird Elegant Sunbird	Javan White-eye Sudest White-eye Ambon Yellow White-eye Gezo White-eye Nendo White-eye Small Lifou White-eye White-breasted White-eye Large Lifou White-eye Seychelles White-eye Fernando Po Speirops Principe Speirops Mount Karthala White-eye Mauritius Olive White-eye Sanford's White-eye
Sitta magna Sitta formosa	Family Rhabdornithidae Rhabdornis grandis	Family Dicaeidae Dicaeum everetti Dicaeum vincens Pardalotus quadragintus	Family Nectariniidae Anthreptes rubritorques Anthreptes pallidigaster Dreptes thomensis Nectarinia buettikoferi Nectarinia prigoginei Nectarinia rufipennis Aethopyga duyvenbodei	Family Zosteropidae Zosterops flava Zosterops meeki Zosterops kuehni Zosterops luteirostris Zosterops sanctaecrucis Zosterops minuta Zosterops minuta Zosterops inornata Zosterops brunneta Zosterops modestus Speirops brunneus Speirops choronothus Voodfordia lacertosa Rukia ruki

Oculocincta squamifrons Lophozosterops dohertyi Madanga ruficollis Rukia longirostra Heleia muelleri

Family Meliphagidae

Philemon fuscicapillus Philemon moluccensis Melidectes princeps Notiomystis cincta Myzomela kuehni Meliphaga vicina Philemon brassi

Xanthomyza phrygia Manorina melanotis Moho bishopi

Moho braccatus

Family Emberizidae

Melanodera melanodera Sporophila hypochroma Sporophila falcirostris Torreornis inexpectata Emberiza jankowskii Xenospingus concolor Ammodramus baileyi Emberiza sulphurata Sporophila frontalis Rowettia goughensis Sporophila insulata Nesospiza acunhae Nesospiza wilkinsi Poospiza rubecula Poospiza garleppi Incaspiza ortizi Poospiza baeri

Rufous-throated White-eye Great Pohnpei White-eye Spot-breasted White-eye Crested White-eye Pygmy White-eye

Crimson-hooded Honeyeater Sudest Meliphaga Brass's Friarbird Stitchbird

Black-faced Friarbird **Dusky Friarbird**

Long-bearded Melidectes

Regent Honeyeater Black-eared Miner Bishop's Oo Kauai Oo

lapanese Yellow Bunting Sierra Madre Sparrow ankowski's Bunting Zapata Sparrow

Black-throated Finch Gough Bunting

Slender-billed Finch Grosbeak Bunting Tristan Bunting

Rufous-breasted Warbling Finch Cochabamba Mountain Finch Grey-winged Inca Finch

Fucuman Mountain Finch **Buffy-throated Seedeater** Femminck's Seedeater **Fumaco Seedeater**

Rufous-rumped Seedeater

Dark-throated Seedeater

Sporophila ruficollis

Federated States of Micronesia (U.S.A.) Indonesia Indonesia

ndonesia, Malaysia

Indonesia

ndonesia

Papua New Guinea New Zealand ndonesia

Indonesia Indonesia

indonesia, Papua New Guinea

Hawaiian Is (U.S.A.) Hawaiian Is (U.S.A.)

Australia Australia

China, Japan, Philippines, Taiwan China, North Korea, U.S.S.R.

Argentina, Chile Mexico Cuba

Gough Island (U.K.)

Fristan da Cunha group (U.K.) Fristan da Cunha group (U.K.)

Chile, Peru Peru

Bolivia Peru

Argentina, Brazil, Paraguay Argentina

Argentina, Brazil Colombia

Argentina, Bolivia, Brazil, Paraguay, Argentina, Bolivia Jruguay

Dendroica kirtlandii Catharopeza bishopi

Geothlypis speciosa

Family Parulidae

Brazil, Colombia, Ecuador, Peru, Venezuela Argentina, Bolivia, Brazil, Paraguay Argentina, Brazil, Paraguay Argentina, Brazil, Uruguay Argentina, Brazil, Paraguay J.S.A., Central America Guatemala, Mexico Colombia, Ecuador Colombia, Ecuador 3ahama Is, U.S.A. Argentina, Brazil Ecuador, Peru Cuba, U.S.A. Costa Rica St. Vincent Venezuela Colombia Colombia Colombia Colombia Colombia Colombia Ecuador Ecuador Ecuador Ecuador Mexico Mexico Brazil Brazil Brazil Brazil Brazil Peru Brazil Peru Golden-backed Mountain Tanager Black-cheeked Ant Tanager Yellow-green Bush Tanager Olive-headed Brush Finch Black-polled Yellowthroat Venezuelan Flowerpiercer Green-throated Euphonia Pale-headed Brush Finch Cherry-throated Tanager Golden-cheeked Warbler Black-and-gold Tanager Seven-coloured Tanager Blackish-blue Seedeater Black-bellied Seedeater Azure-rumped Tanager Scarlet-breasted Dacnis Multicoloured Tanager Green-capped Tanager Altamira Yellowthroat Black-backed Tanager Black-cowled Saltator Gold-ringed Tanager White-bellied Dacnis Black-legged Dacnis Black-masked Finch Floreana Tree Finch Cone-billed Tanager Bachman's Warbler Sooty Ant Tanager Chestnut Seedeater Kirtland's Warbler Whistling Warbler Furquoise Dacnis Mangrove Finch Yellow Cardinal Masked Saltator Sangara meyerdeschauenseei Buthraupis melanochlamys Chlorospingus flavovirens Chlorochrysa nitidissima Camarhynchus heliobates Suthraupis aureodorsalis Sporophila melanogaster Sporophila cinnamomea Conothraupis mesoleuca Coryphaspiza melanotis Diglossa venezuelensis Dendroica chrysoparia Suthraupis aureocincta Geothlypis flavovelata Camarhynchus pauper Vermivora bachmanii

Euphonia chalybea

Fangara cabanisi Cangara fastuosa Fangara peruviana

Dacnis albiventris

Dacnis hartlaubi Dacnis nigripes Dacnis berlepschi

Habia atrimaxillaris

Nemosia rourei

Habia gutturalis

Atlapetes pallidiceps

Atlapetes flaviceps

Subernatrix cristata

Saltator nigriceps

Saltator cinctus

Amaurospiza moesta

Leucopeza semperi Myioborus pariae Basileuterus cinereicollis Basileuterus ignotus Basileuterus leucophrys Xenoligea montana

Family Drepanididae

Oreomystis bairdi Oreomystis mana Paroreomyza maculata Paroreomyza flammea Paroreomyza montana

Loxops coccinea Hemignathus obscurus Hemignathus lucidus Hemignathus munroi Pseudonestor xanthophrys Telespyza ultima Telespyza cantans Psittirostra psittacea Psittirostra bailleui

Family Vireonidae

Melamprosops phaesoma

Palmeria dolei

Vireo atricapillus Vireo caribaeus Family Icteridae
Psarocolius cassini
Cacicus koepckeae
Icterus bonana
Icterus oberi
Agelaius flavus

Semper's Warbler
Yellow-faced Redstart
Grey-throated Warbler
Pirre Warbler
Grey-headed Warbler
White-striped Warbler
White-winged Ground Warbler

Pearly-breasted Conebill

Kauai Creeper Hawaii Creeper Oahu Creeper Mulokai Creeper

Mulokai Creepei Maui Creeper Akepa Akialoa

Akialoa Nukupuu Akiapolaau Maui Parrotbill

Maui Parrotbill Nihoa Finch Laysan Finch

Ou Palila Poo Uli

Poo Uli Crested Honeycreeper Black-capped Vireo San Andres Vireo Chestnut-mantled Oropendola Selva Cacique Martinique Oriole Montserrat Oriole

Saffron-cowled Blackbird

E St. Lucia
K* Venezuela
K* Colombia, Venezuela

K* Panama
K* Venezuela
K* Brazil
K* Dominican Republic

K* Dominican Republic, HaitiK* Brazil, Peru

K* Hawaiian Is (U.S.A.)

Hawaiian Is (U.S.A.)
Hawaiian Is (U.S.A.)
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R Hawaiian Is (U.S.A.)

R Hawaiian Is (U.S.A.) V Hawaiian Is (U.S.A.) * Mexico, U.S.A. * San Andres I. (Colombia)

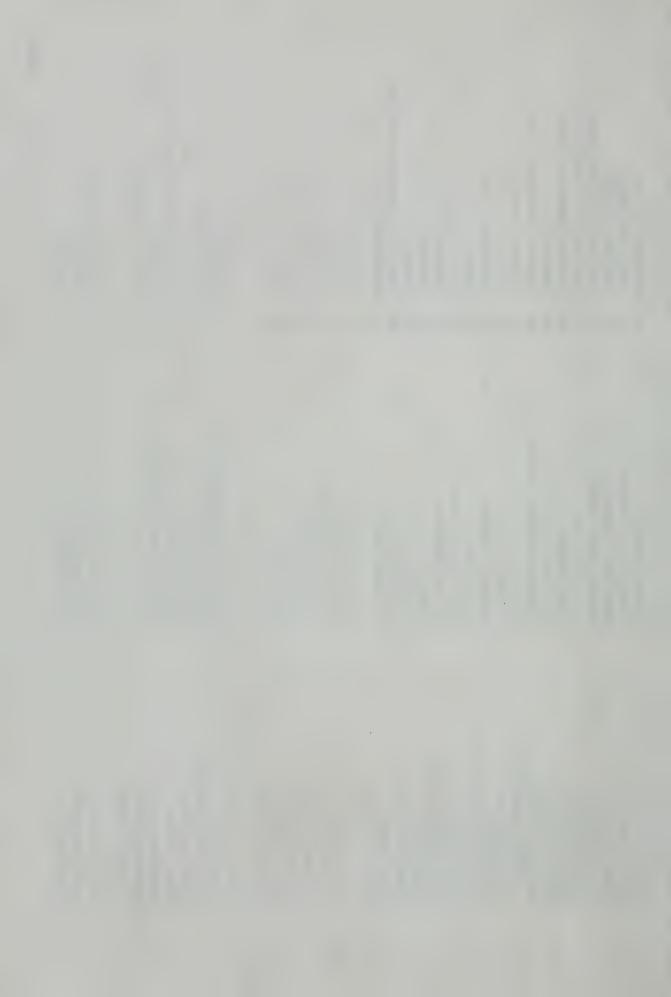
K* ColombiaK* PeruK* Martinique (France)

Montserrat (U.K.)
Argentina, Bolivia, Brazil, Paraguay,
Uruguay

V Puerto Rico K* Argentina, Brazil, Uruguay K* Colombia K* Brazil	R Canary Is (Spain) R Ethiopia I Ethiopia I Sao Tomé K* Brazil, Venezuela E Venezuela K* Ecuador R Somalia	K Nigeria K Zaire K* India K* Philippines K* Philippines K Australia K* Indonesia	V Cameroon, Nigeria R Cameroon K Angola, Congo K Angola, Congo, Zaire K Zaire E Kenya R Zaire K* India R Zaire R Tanzania K Tunzania K Uganda E Nigeria I Liberia, Sierra Leone
Yellow-shouldered Blackbird Lesser Red-breasted Meadowlark Red-bellied Grackle Forbes's Blackbird	Blue Chaffinch Ankober Serin Yellow-throated Serin Sao Tomé Grosbeak Yellow-faced Siskin Red Siskin Saffron Siskin	Anambra Waxbill Black-lored Waxbill Green Munia Green-faced Parrotfinch Red-eared Parrotfinch Pink-billed Parrotfinch Gouldian Finch	Bannerman's Weaver Bates's Weaver Black-chinned Weaver Loango Slender-billed Weaver Lake Lufira Weaver Clarke's Weaver Golden-naped Weaver Finn's Baya Weaver Finn's Baya Weaver Tanzanian Mountain Weaver Entebbe Weaver Ibadan Malimbe Gola Malimbe
Agelaius xanthomus Sturnella defilippi Hypopyrrhus pyrohypogaster Curaeus forbesi	Family Fringillidae Fringilla teydea Serinus ankoberensis Serinus flavigula Neospiza concolor Carduelis yarrellii Carduelis siemiradzkii Acanthis johannis	Family Estrildidae Estrilda poliopareia Estrilda nigriloris Estrilda formosa Erythrura viridifacies Erythrura kleinschmidti Erythrura gouldiae Padda fuscata	Family Ploceidae Ploceus bannermani Ploceus batesi Ploceus nigrimentum Ploceus subpersonatus Ploceus golandi Ploceus golandi Ploceus golandi Ploceus megarhynchus Ploceus nicolli Ploceus nicolli Ploceus ballmanni

ody E Mauritius R Seychelles ody E Rodrigues (Mauritius)	Rusty-winged Starling Santo Mountain Starling Rarotonga Starling Abbott's Starling Sri Lanka White-headed Myna Szarling Szarling Szarling K* Szi Lanka Szi Lanka E Indonesia	K* Philippines K* China, Thailand K* Principe (Sao Tomé) R Comoro Is R Mayotte (France)	Kokako E New Zealand K* New Zealand	herbird K* Papua New Guinea werbird K* Papua New Guinea	Macgregor's Bird of Paradise Long-tailed Paradigalla K* Indonesia K* Indonesia, Papua New Guinea
Foudia rubra Mauritius Fody Foudia sechellarum Seychelles Fody Foudia flavicans	Family Sturnidae Aplonis zelandica Aplonis santovestris Aplonis pelzelni Aplonis cinerascens Aplonis cinerascens Cinnyricinclus femoralis Sturnus senex Leucopsar rothschildi Aplonis zenex Bali Starling	Family Oriolidae Oriolus isabeliae Oriolus mellianus Dicrurus modestus Dicrurus fuscipennis Dicrurus waldeni	Family Callacidae Callacas cinerea Creadion carunculatus Family Creaticidae	Cracticus louisiadensis Family Ptilonorhynchidae Sericulus bakeri Adelbert Bowerbird	Family Paradisaeidae Maccegoria pulchra Paradigalla carunculata Epimachus fastuosus Epimachus meyeri Astrapia mayeri Macgregor's Bird of Paradigalla Long-tailed Paradigalla Black Sicklebill Brown Sicklebill Ribbon-tailed Astrapia

K* Papua New Guinea K* Papua New Guinea K* Papua New Guinea	K* Colombia, Ecuador K* Mexico K* Mexico K* Argentina, Brazil K* China K* Sri Lanka K* Burma K* Burma K* Indonesia K* Indonesia K* Indonesia E Guam, Northern Mariana Is (U
Wahnes's Parotia Goldie's Bird of Paradise Blue Bird of Paradise	Beautiful Jay Dwarf Jay White-throated Jay Azure Jay Sichuan Jay Sri Lanka Magpie Hooded Treepie Ratchet-tailed Treepie Ethiopian Bush Crow Banggai Crow Flores Crow Hawaiian Crow
Parotia wahnesi Paradisaea decora Paradisaea rudolphi	Family Corvidae Cyanolyca pulchra Cyanolyca nana Cyanolyca mirabilis Cyanocorax caeruleus Perisoreus internigrans Urocissa ornata Crypsirina cucullata Temnurus temnurus Zavattariornis stresemanni Corvus ylorensis Corvus kubaryi Corvus tropicus





CLASS REPTILIA

Order TESTUDINES	Family Carettochelyidae	Carettochelys insculpta
Ord	Fam	Carette

Acanthochelys pallidipectoris Acanthochelys macrocephala Pseudemydura umbrina Acanthochelys spixii Family Chelidae Phrynops rufipes Phrynops zuliae Phrynops hogei Phrynops dahli

Eretmochelys imbricata Family Cheloniidae Lepidochelys olivacea Lepidochelys kempii Chelonia mydas Caretta caretta

Macroclemys temminckii Family Chelydridae

Family Dermatemydidae Dermatemys mawii

Family Dermochelyidae Dermochelys coriacea

Cistoclemmys galbinifrons Cistoclemmys hainanensis Annamemys annamensis Clemmys muhlenbergii Callagur borneoensis Family Emydidae Batagur baska

¥ New Guinea Plateless Turtle

X X X × Big-headed Pantanal Swamp Turtle Black Spine-necked Swamp Turtle Red-headed Sideneck Turtle Dahl's Toad-headed Turtle Hoge's Side-necked Turtle Zulia Toad-headed Turtle Chaco Sideneck Turtle

Loggerhead Turtle Hawksbill Turtle Kemp's Ridley Green Turtle Olive Ridley

Alligator Snapping Turtle

Central American River Turtle

Ш Annam Leaf Turtle Leatherback

Indochinese Box Turtle Hainan Box Turtle Painted Terrapin River Terrapin 30g Turtle

Australia, New Guinea

Argentina, Brazil, Uruguay Argentina, Paraguay Colombia Brazil Brazil

Brazil, Colombia Venezuela 区区

Western Australia

Western Swamp Turtle

Subtropical & Temperate Seas **Fropical Seas**

Gulf of Mexico Tropical Seas шшшш

Tropical Seas

U.S.A.

Tropical & Temperate Seas

Central America

South-east Asia South-east Asia Viet Nam Viet Nam 田区

1			
Amazon Basin	4 >	Yellow-spotted Sideneck Turtle	Podocnemis unifilis
Colombia Brazil, Colombia, Peru	_ ×	Rio Magdalena River Turtle	rodocnemis iewyana Podocnemis sextuberculata
Amazon Basin	ш	South American River Turtle	Podocneniis expansa
Brazil, Venezuela	×	Red-headed Amazon Turtle	Podocnemis erythrocephala
Madagascar Seychelles	_ ×	Madagascan Side-necked Turtle Seychelles Mud Turtle	Erymnochelys madagascariensis Pelusios seychellensis
			Family Pelomedusidae
U.S.A.	>	Flattened Musk Turtle	Sternotherus depressus
Mexico	: —	Oaxaca Mud Turtle	Kinosternon oaxacae
Mexico Colombia	> ~	Creaser's Mud Turtle Dunn's Mud Turtle	Kinosternon creaseri Kinosternon dunni
Costa Rica, Nicaragua, Panama	2	Narrow-bridged Mud Turtle	Kinosternon angustipons
			Family Kinosternidae
Hispaniola	×	Hispaniolan Slider	I rachemys decorata
Mexico	×	Spotted Box Turtle	Terrapene nelsoni
Mexico	۷ >	Aquatic Box Turtle	Terrapene coahuila
Colombia, Venezuela	> :	South American Red-lined Turtle	I rachemys scripta callirostris Rhinoclemmys rubida
	×	Inagua Island Turtle	Trachemys stejnegeri malonei
Bahamas	×	Cat Island Turtle	Trachemys terrapen felis
U.S.A.	~	Alabama Red-bellied Turtle	Pseudemys alabamensis
Indonesia, Malaysia	×	Malaysian Giant Turtle	Orlitia borneensis
Burma	. 🗠	Burmese Eyed Turtle	Morenia ocellata
Bangladesh India Nenal	<u> </u>	Tricarinate Hill Turtle	Melanochelys tricarinata
Burma	<u> </u>	Burmese Roofed Turtle	Kachuga trivittata
Bangladesn, India, Nepal India	_ ×	Assam Roofed Turtle	Kachuga sylhetensis
Indonesia, Malaysia, Thailand	∠,	Spiny Turtle	Rochusa Lochusa
India	>	Cane Turtle	Geoemyda silvatica
Leyte (Philippines)	_	Leyte Pond Turtle	Heosemys leytensis
Burma	×	Arakan Forest Turtle	Heosemys depressa
U.S.A.	×	Ringed Map Turtle	Graptemys oculifera
U.S.A.	-	Yellow-blotched Map Turtle	Graptemys flavimaculata
U.S.A.	×	Cagle's Map Turtle	Graptemys caglei
U.S.A.	×	Barbour's Map Turtle	Grapteniys barbouri
South Asia	4	Spotted Pond Turtle	Geoclemys hamiltonii
China	×	Yunnan Box Turtle	Cuora vunnanensis

V Argentina, Paraguay V Galapagos Is R Aldabra K Burma V Madagascar E Madagascar	V Mexico, U.S.A. I Mexico, U.S.A. E Mexico V U.S.A. K Namibia K India, South-east Asia R India, Indonesia* K Kenya, Tanzania	K South-east Asia K South-east Asia V South Africa I Madagascar I Madagascar V Europe, North Africa V Europe V Esypt, Israel, Libya R Bangladesh	E China T Central & South America E Southern South America E South America	E Caribbean, Central America, I Africa E Colombia, Venezuela V Australia
Chaco Tortoise Galapagos Giant Tortoise Aldabra Giant Tortoise Burmese Starred Tortoise Radiated Tortoise Angonoka	Desert Tortoise Texas Gopher Tortoise Bolson Tortoise Florida Gopher Tortoise Berger's Tortoise Elongated Tortoise Travancore Tortoise Pancake Tortoise	Burmese Brown Tortoise Impressed Tortoise Geometric Tortoise Spider Tortoise Madagascar Flat-shelled Tortoise Spur-thighed Tortoise Hermann's Tortoise Egyptian Tortoise Black Soft-shell Turtle	Chinese Alligator Spectacled Caiman Broad-nosed Caiman Black Caiman	American Crocodile African Slender-snouted Crocodile Orinoco Crocodile Australian Fresh-water Crocodile
Family Testudinidae Geochelone chilensis Geochelone elephantopus Geochelone gigantea Geochelone platynota Geochelone radiata Geochelone radiata	Gopherus agassizii Gopherus berlandieri Gopherus flavomarginatus Gopherus polyphemus Homopus bergeri Indotestudo elongata Indotestudo forstenii	Manouria emys Manouria impressa Psammobates geometricus Pyxis arachnoides Pyxis planicauda Testudo graeca graeca Testudo kleinmanni Testudo kleinmanni	Order CROCODYLIA Family Alligatoridae Alligator sinensis Caiman crocodilus Caiman latirostris Melanosuchus niger	Family Crocodylidae Crocodylus acutus Crocodylus cataphractus Crocodylus intermedius Crocodylus johnsoni

U.S.A.

							6
Philippines Central America Africa, Madagascar New Guinea South Asia Asia, Australia, West Pacific Cuba South-east Asia West & Central Africa South-east Asia	South Asia	New Zealand	Sri Lanka Philippines	U.S.A.	U.S.A.	South Africa	U.S.A. Round I., Serpent I. Australia Rodrigues Round I.
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Philippines Crocodile Morelet's Crocodile Nile Crocodile New Guinea Crocodile Mugger Estuarine Crocodile Cuban Crocodile Siamese Crocodile West African Dwarf Crocodile False Gharial	Gharial	Tuatara	Leaf-nosed Lizard Sail-fin Lizard	Panamint Alligator Lizard	Black Legless Lizard	Smith's Dwarf Chamaeleon	Switak's Barefoot Gecko Serpent Island Gecko Reticulated Velvet Gecko Rodrigues Day Gecko Gunther's Gecko
Crocodylus mindorensis Crocodylus moreletii Crocodylus miloticus Crocodylus palustris Crocodylus porosus Crocodylus rhombifer Crocodylus siamensis Osteolaemus tetraspis Tomistoma schlegelii	Family Gavialidae Gavialis gangeticus	Order RHYNCHOCEPHALIA Family Sphenodontidae Sphenodon punctatus	Order SAURIA Family Agamidae Ceratophora tennentii Hydrosaurus pustulatus	Family Anguidae Gerrhonotus panamintus	Family Anniellidae Anniella pulchra nigra	Family Chamaeleonidae Bradypodion taeniabronchum	Family Gekkonidae Anarbylus switaki Nactus serpensinsula Oedura reticulata Phelsuma edwardnewtonii

Family Helodermatidae Heloderma horridum Heloderma suspectum	Beaded Lizard Gila Monster	н >	Guatemala, Mexico Mexico, U.S.A.
Family Iguanidae Amblyrhynchus cristatus	Galapagos Marine Iguana	×	Galapagos Is
Anolis roosevelti Brachylophus fasciatus	Culebra Island Giant Anole South Pacific Banded Iguana	ш >	Culebra I. (Puerto Rico) Fiji, Tonga
Brachylophus vitiensis	Fiji Crested Iguana	>	
Conolophus pallidus	Barrington Land Iguana	₩ >	Galapagos Is
Conotophus suocristatus Cyclura carinata	Catapagos Land Iguana Turks & Caicos Rock Iguana	> ₩	Bahamas, Turks & Caicos
Cyclura cornuta	Rhinoceros Rock Iguana	Н	Hispaniola, Mona I.
Cyclura cychlura	Andros Ground Ignana	∠ >	Bahamas Cayman Is Cuba
Cyclura pinguis	Anegada Ground Iguana	- ш	Anegada (British Virgin Is)
Cyclura ricordii	Hispaniolan Ground Iguana	-	Hispaniola
Cyclura rileyi		H	Bahamas
Gambelia silus Phrunosama cornatum Hainvillei	San Joaquin Leopard Lizard	피논	U.S.A. Mexico IISA
Uma inornata	Coachella Fringe-toed Lizard	: >	U.S.A.
Family Lacertidae			
Gallotia simonyi	Hierro Giant Lizard	щ	Hierro (Canary Is)
Podarcis filfolensis filfolensis	Filfola Lizard	¥	riitola I. (Maita)
Family Scincidae			
Ctenotus lancelini	Lancelin Island Skink	~ 1	Australia
Gongylomorphus bojerni fontenayi	Macabé Forest Skink	* F	Mauritius
Letolopisma letjairii Maracciiiciis caciaai	Round Island Skink	Т *2	Round I.
mus oscincus cocinei Pseudemoia pal freymani	Pedra Branca Skink		Pedra Branca I. (Australia)
Tiliqua adelaidensis	Adelaide Pigmy Bluetongue Lizard	; —	Australia
Tribolonotus ponceleti		Ι	Shortland I. (Solomon Is)
Family Teildae			
Anteiva polops	St Croix Ground Lizard	Щ	U.S. Virgin Is
Cnemidophorus hyperythrus	Orange-throated Whiptail	>	Mexico, U.S.A.

Luzon (Philippines) Central-west Asia Indonesia	U.S.A.	Peninsular Malaysia	Madagascar Madagascar Round I. Round I. U.S.A. Cuba Puerto Rico Mona I. Bahamas Jamaica South & South-east Asia Madagascar U.S.A.	
₩ > ₩	ĸ	×	以以足足段」 日段段 > 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
Gray's Monitor Central Asian Monitor Komodo Dragon	Island Night Lizard	Leonard's Pipe Snake	Madagascar Boa Round Island Boa Round Island Keel-scaled Boa Southern Rubber Boa Cuban Tree Boa Puerto Rican Boa Mona Boa Bimini Boa Jamaican Boa Indian Python Eastern Indigo Snake San Joaquin Coachwhip Almeda Striped Racer Atlantic Saltmarsh Snake Concho Water Snake Lake Erie Water Snake Giant Garter Snake Two-striped Garter Snake San Francisco Garter Snake	
Family Varanidae Varanus grayi Varanus griseus caspius Varanus komodoensis	Family Xantusiidae Xantusia riversiana	Order SERPENTES Family Aniliidae Anomochilus leonardi	Family Boidae Acrantophis dumerili Acrantophis madagascariensis Bolyeria multocarinata Casarea dussumieri Charina bottae umbratica Epicrates angulifer Epicrates inornatus Epicrates monensis monensis Epicrates striatus fosteri Epicrates striatus fosteri Epicrates subflavus Sanzinia madagascariensis Family Colubridae Drymarchon corais couperi Iguanognathus werneri Masticophis flagellum ruddocki Masticophis lateralis euryxanthus Nerodia fasciata taeniata Nerodia sipedon insularum Thamnophis sintalis tetrataenia Thermophis sintalis tetrataenia	

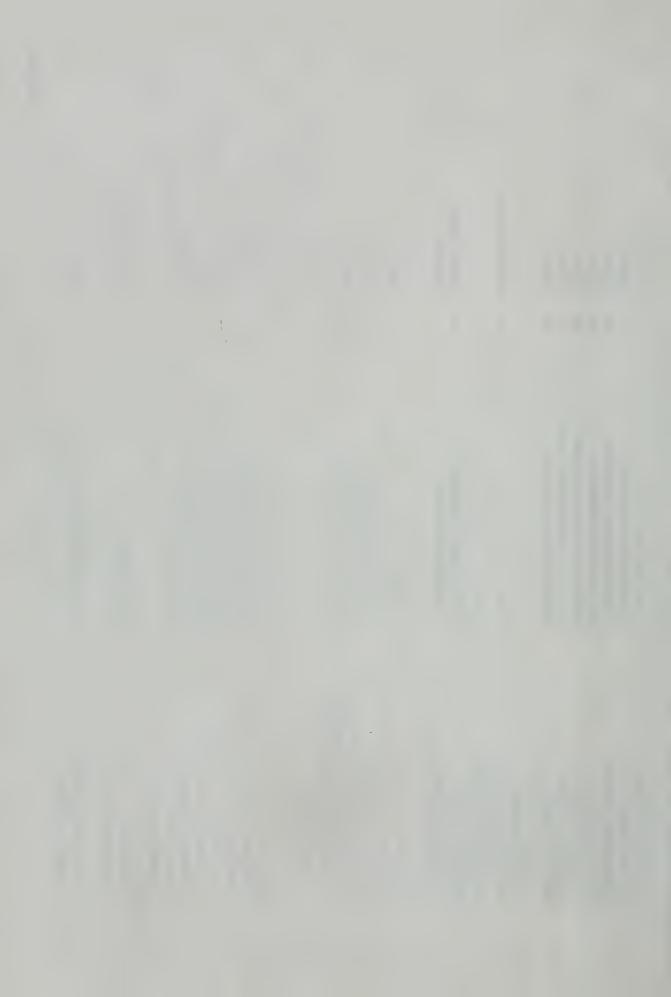
Australia Australia Central Asia Fiji	Rennel I. (Solomon Is)	Mona I.	Queimada I. (Brazil)	Aruba I.	Mexico, U.S.A. Turkey, U.S.S.R.	Lebanon, Syria Turkey	Turkey, U.S.S.R. Iran	Cyclades Is (Greece) Iran, Turkey, U.S.S.R.	Iran
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Broad-headed Snake Central Asian Cobra Fiji Snake (Bolo)		Mona Blind Snake	Queimada Island Bothrops	Aruba Island Rattlesnake	Kidge-nosed Kattlesnake Transcaucasian Long-nosed Viper		Caucasian Viper Latifi's Viper	Lebetine Viper Armenian Viper	
Family Elapidae Brachyaspis atriceps Hoplocephalus bungaroides Naja oxiana Ogmodon vitianus	Family Hydrophiidae Laticauda crockeri	Family Typhlopidae Typhlops monensis	Family Viperidae Bothrops insularis	Crotalus unicolor	Crotatus Wittarat Vipera ammodytes transcaucasiana	Vipera bornmuelleri Vipera bulgardaghica	Vipera kaznakovi Vipera latifii	Vipera lebelina schweizeri Vipera raddei	r ipera wagneri

CLASS AMPHIBIA

I U.S.A. R U.S.A. E U.S.A. E Costa Rica V Mexico, U.S.A. V Guinea, Ivory Coast	Ex? Israel I Mallorca (Spain)	R U.S.A. I U.S.A.	R Seychelles	R New Zealand R New Zealand R New Zealand	K Peru R Puerto Rico I Argentina	I India	I Australia E Australia I Australia
Amargosa Toad Black Toad Houston Toad Golden Toad Sonoran Green Toad Mount Nimba Viviparous Toad	Israel Painted Frog Ferreret	Pine Barrens Tree Frog Illinois Chorus Frog	Seychelles Tree Frog	Archey's Frog Hamilton's Frog Hochstetter's Frog	Lake Junin Giant Frog Golden Cocqui Frog	Black Microhylid	Baw Baw Frog Conondale Gastric-brooding Frog Eungella Gastric-brooding Frog
Order ANURA Family Bufonidae Bufo boreas nelsoni Bufo exsul Bufo houstonensis Bufo periglenes Bufo retiformis	Family Discoglossidae Discoglossus nigriventer Alytes muletensis	Family Hylidae Hyla andersoni Pseudacris streckeri illinoensis	Family Hyperoliidae Tachycnemis seychellensis	Family Leiopelmatidae Leiopelma archeyi Leiopelma hamiltoni Leiopelma hochstetteri	Family Leptodactylidae Batrachophrynus macrostomus Eleutherodactylus jasperi Somuncuria somuncurensis	Family Microhylidae Melanobatrachus indicus	Family Myobatrachidae Philoria frosti Rheobatrachus silus Rheobatrachus vitellinus

Italy	South Africa	Cameroon, Eq. Guinea Seychelles Fiji Italy, Switzerland, Yugoslavia U.S.A. Seychelles Seychelles	U.S.A. Mexico Mexico U.S.A. Mexico	China Japan	Afghanistan	U.S.A. U.S.A. U.S.A. U.S.A. U.S.A.
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Italian Spadefoot Toad	Cape Platanna	Goliath Frog Thomasset's Seychelles Frog Fijian Ground Frog Italian Agile Frog Vegas Valley Leopard Frog Gardiner's Seychelles Frog Seychelles Frog	California Tiger Salamander Lake Patzcuaro Salamander Lake Lerma Salamander Santa Cruz Long-toed Salamander Axolotl	Chinese Giant Salamander Japanese Giant Salamander		Desert Slender Salamander Kern Canyon Slender Salamander Tehachapi Slender Salamander San Marcos Salamander Limestone Salamander Shasta Salamander Red Hills Salamander
Family Pelobatidae Pelobates fuscus insubricus	Family Pipidae Xenopus gilli	Family Ranidae Conrawa goliath Nesomantis thomasseti Platymantis vitianus Rana latastei Rana fisheri Sooglossus gardineri Sooglossus sechellensis	Order CAUDATA Family Ambystomatidae Ambystoma tigrinum californiense Ambystoma dumerilii dumerilii Ambystoma lermaensis Ambystoma macrodactylum croceum Ambystoma mexicanum	Family Cryptobranchidae Andrias davidianus Andrias japonicus	Family Hynobildae Batrachuperus mustersi	Family Plethondontidae Batrachoseps aridus Batrachoseps simatus Batrachoseps stebbinsi Eurycea nana Hydromantes brunus Hydromantes shastae Phaeognathus hubrichti

1 U.S.A. V U.S.A. K U.S.A. K U.S.A. E U.S.A.	V Italy, Yugoslavia	V Portugal, Spain I Viet Nam
Larch Mountain Salamander Jemez Mountains Salamander Cheat Mountain Salamander Siskiyou Mountains Salamander Texas Blind Salamander Grotto Salamander	Olm	Gold-striped Salamander Vietnamese Salamander
Plethodon larselli Plethodon neomexicanus Plethodon nettingi Plethodon stormi Typhlomolge rathbuni Typhlotriton spelaeus	Family Proteidae Proteus anguinus	Family Salamandridae Chioglossa lusitanica Paramesotriton deloustali





CLASS CEPHALASPIDOMORPHI

Ex [U.S.A.] R Australia		K Comoros, [South Africa]	V Ca ada, U.S.A. V Canada, U.S.A. V Canada, U.S.A. V U.S.S.R. E Europe R U.S.R. E U.S.A.	I U.S.A.	V Amazon Basin K South-east Asia	R Kampuchea, Thailand	E Turkey I South-east Asia V South Africa R South Africa
Miller Lake Lamprey Non-parasitic Lamprey		Latimeria	Shortnose Sturgeon Lake Sturgeon Atlantic Sturgeon Amur Sturgeon Common Sturgeon Kaluga Pallid Sturgeon	Paddlefish	Pirarucu Asian Bonytongue	Featherback	Ciçek Pla Hang Mai Cape Whitefish Burchell's Redfin
Order PETROMYZONTIFORMES Family Petromyzontidae Lampetra minima Mordacia praecox	CLASS OSTEICHTHYES	Order COELACANTHIFORMES Family Latimeriadae Latimeria chalumnae	Order ACIPENSERIFORMES Family Acipenseridae Acipenser brevirostrum Acipenser fulvescens Acipenser oxyrhynchus Acipenser schrencki Acipenser sturio Huso dauricus Scaphirhynchus albus	Family Polyodontidae Polyodon spathula	Order OSTEOGLOSSIFORMES Family Osteoglossidae Arapaima gigas Scleropages formosus	Family Notopteridae Notopterus blanci	Order CYPRINIFORMES Family Cyprinidae Acanthorutilus handlirschi Balantiocheilus melanopterus Barbus andrewi Barbus burchelli

Fhailand, Malaysia Mexico, U.S.A. Mexico, U.S.A. Mexico, U.S.A. Mexico, U.S.A. South Africa Sri Lanka Sri Lanka Sri Lanka Sri Lanka Sri Lanka Thailand **Fhailand** Mexicol Mexico Mexicol Mexico Mexico U.S.A.] J.S.A. U.S.A. U.S.A. U.S.A. Mexico U.S.A. U.S.A. U.S.A. U.S.A. Cuming's Two-banded Barb Clanwilliam Yellowfish Devil's River Minnow Clanwilliam Redfin **Iwee River Redfin** 3erg River Redfin Chihuahuan Chub Side Striped Barb freur River Barb 30rax Lake Chub **3lack Ruby Barb Jumpback Chub** Flatjaw Minnow **3icolor Minnow** Thicktail Chub Roundtail Chub Vamaqua Barb Slender Redfin Fiery Redfin Alvord Chub Saltillo Chub Slender Chub Cherry Barb Sonora Chub raqui Chub Border Barb Desert Dace Flame Chub rui Chub Gila Chub 30nytail Sawfin Gila bicolor (subspecies) Chela caeruleostigmata Barbus nigrofasciatus Hemitremia flammea Dionda mandibularis Barbus pleurotaenia Evarra tlahuacensis **Barbus** somphongsi Barbus srilankensis Evarra bustamantei Evarra eigenmanni Sarbus phlegethon Eremichthys acros Barbus erubescens Dionda dichroma **Barbus** trevelyani Barbus treurensis Gila alvordensis Gila crassicauda Barbus capensis Gila boraxobius Dionda diaboli Gila intermedia Gila nigrescens Barbus cumingi Hybopsis cahni 3arbus calidus Barbus hospes Barbus titteya Gila purpurea Gila modesta Barbus tenuis Gila ditaenia Barbus serra Sarbus halei Gila elegans Gila robusta Sarbus burgi Gila cypha

Lepidomeda altivelis Lepidomeda altivelis Meda mollispinis Little Colorado Spinedace Lepidomeda vittata Moda coriacea Moda coriacea Notropis aguirrepequenoi Notropis caeruleus Notropis jemezamus Notropis proserpinus Notropis proserpinus Notropis proserpinus Notropis saladonis Notropis venetalus No	R U.S.A. V U.S.A. E Sri Lanka R South Africa E U.S.A.
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	V Mexico
	V Mexico, U.S.A.
	R U.S.A.
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	E U.S.A.
	Ex [U.S.A.]
Ikan Temoleh Colorado River Squawfish Vateria Flower Rasbora Relict Dace	R U.S.A.
Colorado River Squawfish Vateria Flower Rasbora Relict Dace	K South-east Asia
Vateria Flower Rasbora Relict Dace	E U.S.A.
Relict Dace	
	V U.S.A.
Rhinichthys osculus (subspecies) Speckled Dace	T* Canada, U.S.A.
Sandhills Chub	R U.S.A.

Ex [Mexico] E Japan V U.S.A. E Turkey	E Sri Lanka E Japan	V Mexico, U.S.A. R U.S.A. V U.S.A. E U.S.A.	×		E Brazil V Argentina	E Chile R Mexico R Mexico E U.S.A.
Stumptooth Minnow Tokyo Bitterling Loach Minnow	Spotted Loach Ayumodoki	Yaqui Sucker Owens Sucker Lost River Sucker Modoc Sucker Warner Sucker	Opata Sucker Shortnose Sucker Cui-ui June Sucker	Blue Sucker Harelip Sucker Rustyside Sucker Copper Redhorse Razorback Sucker	Naked Characin	Tollo de Agua Dulce Rio Verde Catfish Yaqui Catfish Smoky Madtom
Stypodon signifer Tanakia tanago Tiaroga cobitus Tylognathus klatti	Family Cobitidae Lepidocephalus jonklassi Leptobotia curta	Family Catostomidae Catostomus bernardini Catostomus fumeiventris Catostomus luxatus Catostomus microps	Catostomus vingeinsi Chasmistes brevirostris Chasmistes cujus Chasmistes liorus	Cycleptus elongatus Lagochila lacera Moxostoma hamiltoni Moxostoma hubbsi Xyrauchen texanus	Order CHARACIFORMES Family Characidae Catabasis acuminatus Gymnocharacinus bergi	Order SILURIFORMES Family Diplomystidae Diplomystes chilensis Family Ictaluridae Ictalurus mexicanus Ictalurus bricei

E U.S.A. V U.S.A. V U.S.A. V U.S.A. V U.S.A. V U.S.A. V U.S.A. R U.S.A. I Mexico R U.S.A. R U.S.A.	E South Africa R South Africa R South Africa E Japan R South Africa V Mekong Basin R Thailand	I Thailand E Namibia V South Africa	R U.S.A. R Canada, U.S.A.
Yellowfin Madtom Carolina Madtom Orangefin Madtom Ouachita Madtom Frecklebelly Madtom Neosho Madtom Pygmy Madtom Caddo Madtom Scioto Madtom Muzquiz Blindcat Widemouth Blindcat Toothless Blindcat	Barnard's Rock-catfish Clanwilliam Rock-catfish Rock-catfish Nekogigi Clanwilliam Rock-catfish Giant Catfish Pla Thepa	Cave Catfish Incomati Rock Catlet	Olympic Mudminnow Pygmy Smelt
Noturus flavipinnis Noturus furiosus Noturus gilberti Noturus lachneri Noturus placidus Noturus stanauli Noturus trautmani Prietella phreatophila Satan eurystomus	Family Bagridae Austroglanis barnardi Austroglanis gilli Austroglanis sclateri Coreobagrus ichikawai Gephryoglanis gilli Family Pangasiidae Pangasianodon gigas Pangasius sanitwongsei	Family Sisoridae Oreoglanis siamensis Family Clariidae Clarias cavernicola Family Mochokidae Chiloglanis bifurcus	Order SALMONIFORMES Family Umbridae Novumbra hubbsi Family Osmeridae Osmerus spectrum

Australia, Tasmania [New Zealand]	Tasmania Tasmania Tasmania Tasmania New Zealand Tasmania New Zealand	[Great Lakes (North America)] Great Lakes (North America) U.S.A. Mexico U.S.A. Turkey [U.S.A.] Canada, U.S.A.	U.S.A. U.S.A. U.S.A.
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Australian Grayling New Zealand Greyling	Swan Galaxias Clarence Galaxias Small Pedder Galaxias Pedder Galaxias Shortjawed Kokopu Saddled Galaxias Canterbury Mudfish Black Mudfish	Longjaw Cisco Cisco Atlantic Whitefish Bloater Deepwater Cisco Kiyi Blackfin Cisco Shortjaw Cisco Shortjaw Cisco Apache Trout Mexican Golden Trout Cutthroat Trout Gila Trout Ala Balik Silver Trout Bull Trout	Ozark Cavefish Northern Cavefish Alabama Cavefish
Family Retropinnidae Prototroctes maraena Prototroctes oxyrhynchus	Family Galaxiidae Galaxias fontanus Galaxias johnstoni Galaxias parvus Galaxias pedderensis Galaxias postvectis Galaxias tanycephalus Neochanna burrowsius Neochanna diversus	Family Salmonidae Coregonus alpenae Coregonus artedii Coregonus canadensis Coregonus hoyi Coregonus kiyi Coregonus kiyi Coregonus kiyi Coregonus reighardi Coregonus zenithicus Salmo apache Salmo chrysogaster Salmo platycephalus Salwelinus agassizi Salvelinus agassizi Stenodus leucichthys leucichthys	Order PERCOPSIFORMES Family Amblyopsidae Amblyopsis rosae Amblyopsis spelaea Speoplatyrhinus poulsoni

E Namibia	R Brazil V Brazil E Brazil I Brazil E Brazil E Brazil E Brazil R Mexico	Ex [U.S.A.] V U.S.A. R U.S.A. V U.S.A. V U.S.A. E Spain	ж ж я я я я я я я я я я я я я я я я я я
S Caprivi Killifish	Brasilia Lyrefin Ginger Pearlfish Minute Pearlfish Opalescent Pearlfish Splendid Pearlfish Mexican Rivulus	Whiteline Topminnow Barrens Topminnow Plains Topminnow Waccamaw Killifish Sardinilla Cuatro Cienegas	Guayacon de San Gregorio Amistad Gambusia Big Bend Gambusia San Marcos Gambusia Clear Creek Gambusia Guayacon de Hacienda Dolores Guayacon de Cuatro Cienegas Pecos Gambusia
Order CYPRINODONTIFORMES Family Aplocheilidae Nothobranchius sp.	Family Rivulidae Cynolebias boitonei Cynolebias constanciae Cynolebias marmoratus Cynolebias minimus Cynolebias splendens Rivulus robustus	Family Fundulidae Fundulus albolineatus Fundulus julisia Fundulus sciadicus Fundulus waccamensis Lucania interioris Family Valenciidae	Family Poecillidae Gambusia alvarezi Gambusia amistadensis Gambusia gaigei Gambusia heterochir Gambusia hurtadoi Gambusia longispinis Gambusia nobilis Micropanchax schoelleri

	V Mexico	V Mexico ·		_					Ex [U.S.A.]		E Mexico		R Mexico		E Brazil	E Mexico											_							E U.S.A.		_ '	V Mexico
	Opal Goodeid	Striped Goodeid	Bold Characodon	Parras Characodon	Rainbow Goodeid	White River Springfish	Railroad Valley Springfish	Pahrump Killifish	Ash Meadows Killifish			Golden Skiffia	Potosi Goodeid		Santa Catarina Sabrefin	Media Luna Killie	Potosi Pupfish	Bolson Pupfish	Blackfin Pupfish	Cuatro Cienegas Pupfish	Leon Springs Pupfish	Devils Hole Pupfish	Comanche Springs Pupfish	Conchos Pupfish	Carbonera Pupfish	Thicklip Pupfish	Parras Pupfish	Bigscale Pupfish	Desert Pupfish	Maya Pupfish	Mezquital Pupfish	Amargosa Pupfish	Bighead Pupfish	Owens Pupfish	Vertical Jaw Pupfish	White Sands Pupfish	Largefin Pupfish
Family Goodeidae	Allotoca maculata	Ataeniobius toweri	Characodon audax	Characodon garmani	Characodon lateralis	Crenichthys baileyi	Crenichthys nevadae	Empetrichthys latos	Empetrichthys merriami	Girardinichthys multivariatus	Girardinichthys viviparus	Skiffia francescae	Xenoophorus captivus	Family Cyprinodontidae	Campellolebias brucei	Cualac tessellatus	Cyprinodon alvarezi	Cyprinodon atrorus	Cyprinodon beltrani	Cyprinodon bifasciatus	Cyprinodon bovinus	Cyprinodon diabolis	Cyprinodon elegans	Cyprinodon eximius.	Cyprinodon fontinalis	Cyprinodon labiosus	Cyprinodon latifasciatus	Cyprinodon macrolepis	Cyprinodon macularius	Cyprinodon maya	Cyprinodon meeki	Cyprinodon nevadensis	Cyprinodon pachycephalus	Cyprinodon radiosus	Cyprinodon simus	Cyprinodon tularosa	Cyprinodon verecundus

Ex? Mexico V Turkey E Mexico E Bolivia	E Indonesia E Indonesia E Indonesia	R U.S.A. V U.S.A.	V Australia V Australia	I Malaysia	V South Africa V South Africa	I Australia	R U.S.A. Ex [U.S.A.] R U.S.A. V U.S.A. V U.S.A.
Perritos de Sandia Scaleless Killifish Caterina Pupfish		Key Silverside Waccamaw Silverside	Lake Eacham Rainbowfish Honey Blue-eye		Knysna Seahorse River Pipefish	Blind Cave Eel	Rough Sculpin Utah Lake Sculpin Bear Lake Sculpin Shoshone Sculpin Klamath Lake Sculpin Pygmy Sculpin
Cyprinodon spp. Kosswigichthys asquamatus Megupsilon aporus Orestias cuvieri	Order BELONIFORMES Family Adrianichthyidae Adrianichthys kruyti Xenopoecilus poptae Xenopoecilus sarasinorum	Order ATHERINIFORMES Family Atherinidae Menidia conchorum Menidia extensa	Family Melanotaeniidae Melanotaenia eachamensis Pseudomugil mellis	Family Phallostethidae Phallostethus dunckeri	Order SYNGNATHIFORMES Family Syngnathidae Hippocampus capensis Syngnathus watermayeri	Order SYNBRANCHIFORMES Family Synbranchidae Ophisternon candidum	Order SCORPAENIFORMES Family Cottidae Cottus asperrimus Cottus extensus Cottus greenei Cottus pygmaeus Cottus pygmaeus

Order PERCIFORMES	Family Percichthyidae	Maccullochella macquariensis	Maccullochella ikei	Maccullochella n.sp.

Family Centrarchidae	cavifrons	notius	treculi
	Ambloplites cavifrons	Micropterus notius	Micropterus treculi

Ammocrypta pellucida Ammocrypta asprella Etheostoma boschungi Etheostoma aculiceps Etheostoma australe Family Percidae Etheostoma aquali

Etheostoma microlepidum Etheostoma luteovinctum Etheostoma kanawhae Etheostoma cinereum Etheostoma fonticola Etheostoma ditrema Etheostoma mariae Etheostoma moorei Etheostoma histrio

Etheostoma okaloosae Etheostoma nianguae Etheostoma nuchale

Etheostoma pallididorsum Etheostoma striatulum Etheostoma tuscumbia Etheostoma trisella Etheostoma saludae Etheostoma rubrum Etheostoma sellare Etheostoma pottsi

Perca schrenki

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Roanoke Bass	Suwannee Bass	Guadalupe Bass

Eastern Sand Darter Coppercheek Darter Sharphead Darter Conchos Darter Crystal Darter

Slackwater Darter Coldwater Darter Harlequin Darter Kanawha Darter Fountain Darter Redband Darter Ashy Darter

Yellowcheek Darter Pinewoods Darter Smallscale Darter Niangua Darter

Vatercress Darter Okaloosa Darter Paleback Darter

Maryland Darter Mexican Darter Striated Darter Bayou Darter Saluda Darter

Fuscumbia Darter Balkhash Perch Frispot Darter

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Australia Australia Australia

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Eastern Freshwater Cod

Frout Cod

Mary River Cod

Canada, U.S.A. U.S.A.

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Mexico U.S.A. U.S.A.

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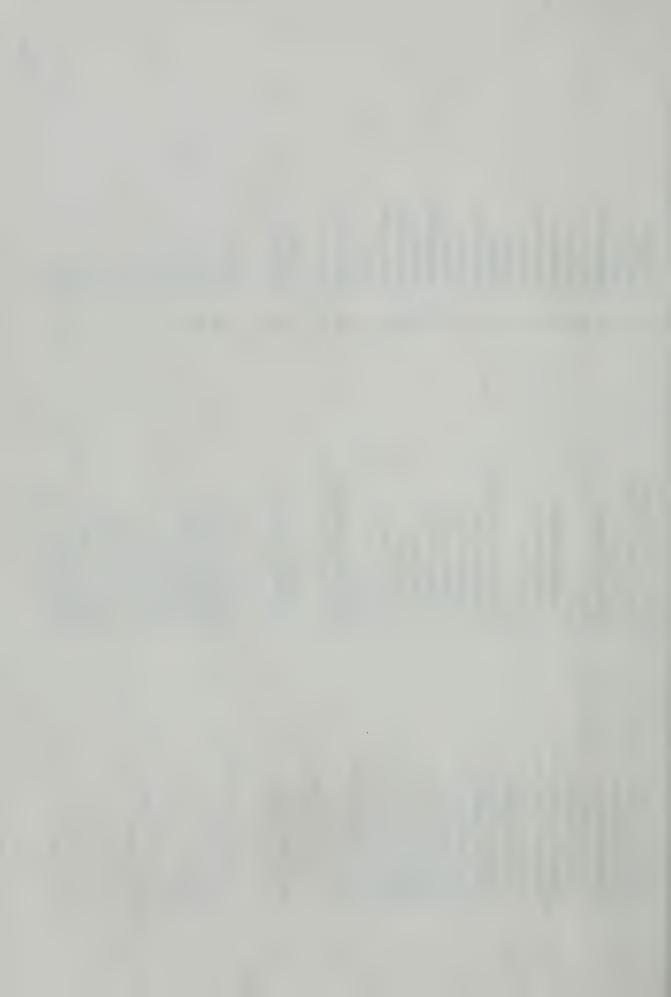
Mexico U.S.A. U.S.A.

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V U.S.A. R U.S.A. E U.S.A. V U.S.A. V U.S.A. V U.S.A. V U.S.A. V U.S.A. E U.S.A. E Rumania	E Mexico	R South Africa V Mexico V Mexico V Mexico R Mexico V Cameroon E South Africa V Cameroon E South Africa V Cameroon E South Africa	E East Africa
Amber Darter Goldline Darter Blotchside Logperch Bluestripe Darter Conasauga Logperch Freckled Darter Longhead Darter Longnose Darter Leopard Darter Roanoke Logperch Snail Darter Stargazing Darter	Totoaba	Orange-fringed Largemouth Mojarra Mojarra Mojarra Mojarra Mojarra Mojarra Dikume Konye Sinarapan Myaka Myaka Pungu Fissi Unga Leka Keppe Kululu Lowveld Largemouth Nsess Mongo Pindu Otjikoto Tilapia Lake Victoria Cichlids	Lake Victoria Cichlids
Percina antesella Percina aurolineata Percina burtoni Percina cymatotaenia Percina jenkinsi Percina lenticula Percina macrocephala Percina pantherina Percina tanasi Percina tanasi Percina uranidea Romanichthys valsanicola	Family Sciaenidae Totoaba macdonaldi	Family Cichildae Astatotilapia brevis Cichlasoma bartoni Cichlasoma labridens Cichlasoma minckleyi Cichlasoma minckleyi Cichlasoma steindachneri Konia dikume Konia eisentrauti Mistichthys luzonensis Myaka myaka Pungu maclareni Sarotherodon linnellii Sarotherodon steinbachi Sarotherodon steinbachi Sarotherodon steinbachi Sarotherodon steinbachi Stomatepia mariae Stomatepia mongo Stomatepia pindu Tilapia guinasana haplochromine spp. (c. 250 spp.)	tilapiine spp. (2 spp.)

R South Africa	V Australia R South Africa	V Australia	I South Africa R U.S.A.	V U.S.A.		R South Africa V South Africa	V South Africa	R Sri Lanka V Sri Lanka
Freshwater Mullet	Flinders Gudgeon Golden Sleeper	Elizabeth Springs Goby	Burrowing Goby Tidewater Goby	O'opu Alamo'o	O'opu Nopili	Sibayi Goby Bearded Eelgoby	Eastern Province Rocky	Combtail Ornate Paradisefish
Family Mugilidae Myxus capensis	Family Eleotridae Mogurnda n.sp. Hypseleotris dayi	Family Gobiidae Chlamydogobius n.sp.	Croilia mossambica Eucyclogobius newberryi	Lentipes concolor	Sicydium stimpsoni	Silhouettea sibayi Taenioides jacksoni	Family Anabantidae Sandelia bainsii	Family Belontiidae Belontia signata Malpulutta kretseri



INVERTEBRATES other than Insects

Phylum CILIOPHORA

CLASS POLYHYMENOPHOREA

Mediterranean Sea, North-east Atlantic Mediterranean Sea, Pacific Ocean CT Caribbean, Indo-Pacific U.K., North America U.S.A. Ocean CT > ¥ ¥ Phylum CNIDARIA Precious Corals (20 species) Black Coral (c 150 species) Starlet Sea Anemone Tartar's Stentor Broad Sea Fan Order HETEROTRICHIDA Order ANTIPATHARIA Order GORGONACEA Family Anthipathidae Family Edwardsiidae Order ACTINIARIA Vematostella vectensis Family Plexauridae Family Stentoridae CLASS ANTHOZOA Family Coralliidae Eunicella verrucosa Stentor introversus Corallium -86-

Malheur Cave Planarian Lake Pedder Planarian Holsinger's Groundwater Planarian Ex? Biggers' Groundwater Planarian E

Romankenkius pedderensis

Sphalloplana holsingeri

Sphalloplana subtilis

CLASS TURBELLARIA

Order TRICLADIDA

Family Kenkiidae

Kenkia rhynchida

[Tasmania] U.S.A. U.S.A.

U.S.A.

CLASS ENOPLA

V New Zealand R Australia R Australia R Actralia R Rodrigues R Tristan da Cunha R Madeira, Azores, Canary Is R Bermuda K Australia K Australia		CT Indo-Pacific	I Hawaii	I U.S.A.	1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A.
Land Nemertines	Phylum MOLLUSCA	Green Snail		Utah Roundmouth Snail	St George Snail Blue Spring Aphaostracon Wekiwa Springs Aphaostracon Compact Hydrobe Snail Fenney's Spring Hydrobe Snail Helicoid Spring Snail
Order HOPLONEMERTEA Family Prosorhochmidae Antiponemertes allisonae Argonemertes hillii Argonemertes stocki Geonemertes rodericana Katechonemertes nightingaleensis Leptonemertes chalicophora Pantinonemertes agricola Pantinonemertes enalios	CLASS GASTROPODA	Order ARCHAEOGASTROPODA Family Turbinidae Turbo marmoratus	Family Neritidae Neritilia hawaiiensis	Order MESOGASTROPODA Family Valvatidae Valvata utahensis	Family Hydrobiidae Amnicola deserta Aphaostracon asthenes Aphaostracon monas Aphaostracon pycnas Aphaostracon xynoeiictus Cincinnatia helicogyra Cincinnatia mica Cincinnatia monroensis

I U.S.A. I U.S.A. I U.S.A. I U.S.A. V Mexico I U.S.A. V Mexico I Tasmania	V Mexico I U.S.A. E U.S.A. I U.S.A. I U.S.A.		Ex? [U.S.A.] I Tasmania I Tasmania E U.S.A. I U.S.A. I U.S.A.	I U.S.A. I U.S.A. V Mexico V Mexico	V Mexico V Mexico V Mexico V Mexico V Mexico I U.S.A. I U.S.A.
Ponderous Spring Snail Seminole Spring Snail Wekiwa Spring Snail Coahuilix de Hubbs Snail Phantom Cave Snail Miller's Snail	Durangonella de Coahuila Snail Muddy Valley Turban Snail Point of Rocks Spring Snail Pahranagat Valley Turban Snail Elk Island Snail	Roswell Fontelicella	Socorro Spring Snail Giant Columbia River Spire Snail	Obese Marstonia Snail Mexipyrgus de Carranza Snail Mexipyrgus de Escobeda Snail	Mexipyrgus de Lugo Shan Mexipyrgus de West El Mojarral Snail Mexipyrgus de East El Mojarral Snail Mexithauma de Cienegas Snail Nymphophilus de Minckley Snail Paludiscala de Oro Snail
Cincinnatia parva Cincinnatia ponderosa Cincinnatia vanhyningi Cincinnatia wekiwae Coahuilix hubbsi Cochliopa texana Cochliopina milleri	Coxiella striata Durangonella coahuilae Fluminicola avernalis Fluminicola erythopoma Fluminicola robusta	Fluminicola sp. (3 species) Fontelicella sp. Fontelicella micrococus Fontelicella robusta Fontelicella sp. (2 species) Fontelicella robusta walkeri	Fonticella neomexicana Glacidorbis pedderi Glacidorbis pawpela Lithoglyphus columbiana Marstonia agarhecta	Marstonia custon Marstonia ogmoraphe Marstonia pachyta Mexipyrgus carranzae Mexipyrgus escobedae	Mexipyrgus lugoi Mexipyrgus mojarralis Mexipyrgus multilineatus Mexithauma quadripaludium Nymphophilus minckleyi Paludiscala caramba Somatogyrus caranotus Somatogyrus tenax Stiobia nana

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Cheatum's Snail White River Snail California Brackish Water Snail	Badwater Snail Pecos Assiminea Snail	Anthony's River Snail Crass River Snail	Albany River Snail Spiny River Snail	Mainstream River Snail	Armigerous River Snail Dutton's River Snail Geniculate River Snail Jay's River Snail File River Eile Snail	Rugged River Snail Verrucose File Snail	Queen Conch	Triton's Trumpet	Zuiderzee Doridella Sea Slug
Tryonia cheatumi Tryonia clathrata Tryonia imitator Tryonia n.sp. (6 species)	Family Assimineidae Assiminea infirma Assiminea sp.	Family Pleuroceridae Apella alabamensis Apella babylonia Athearni anthonyi Athearni crassa	Gumua atoanyensis Goniobasis albanyensis Io arwigera arwigera Io fluvialis	Leptoxis crassa Leptoxis praerosa Leptoxis subumbilicata	Lithasia armigera Lithasia duttoniana Lithasia geniculata Lithasia jayana	Lithasia salebrosa Lithasia verrucosa	Family Strombidae Strombus gigas	Family Cymatiidae Charonia tritonis	Order GYMNOSOMATA Family Corambidae Doridella batava

Order BASOMMATOPHORA Family Lymnaeidae			
Lymnaea kingii Myxas glutinosa Stagnicola pilsbryi	Utah Band Snail Glutinous Snail Fish Springs Pond Snail	_>_	U.S.A. Europe U.S.A.
Family Lancidae Fisherola nuttalli	Giant Columbia River Limpet	н	U.S.A.
Family Physidae Physa spelunca Physa utahensis Physa zionis Physa sp. Physa virgata Stenophysa microstriata	Wyoming Cave Snail Utah Bubble Snail Zion Canyon Snail Snake River Physa Snail Fish Lake Snail	>	U U U S. A. U U S. A. U S. A. U S. A. S. A.
ramily Planorbidae Ancylastrum cumingianus Helisoma jacksonense Helisoma magnificum Segmentina nitida Taphius eucosmius Order STYLOMMATOPHORA	Tasmanian Freshwater 'Limpet' Jackson Lake Snail Cape Fear Ramshorn Snail Greenfield Ramshorn Snail	ш > _	Tasmania U.S.A. U.S.A. Europe U.S.A.
Family Achatinellidae Achatinella (41 species)	22 species Little Agate Shells	EX	[Hawaii]
Partulina confusa Partulina crassa Partulina fusoidea Partulina montagui Partulina perdix Partulina splendida	19 species Little Agate Shells	E < < E < E E	Hawaii Hawaii] Hawaii (Hawaii] Hawaii Hawaii
Family Partulidae Partula aurantia Partula exigua		EX	Moorea) Moorea)

E Guam Ex Moorea Ex Moorea Ex Moorea K Guam K Guam Ex Moorea Ex Moorea Ex Moorea Ex Ex Moorea Ex E	Ex [Hawaii] Ex? [Hawaii]	V Madeira V Madeira V Madeira V Madeira V Madeira I U.S.A.	I U.S.A. V Europe V Europe I U.S.A. V Europe	V Europe	V Europe I U.S.A. V Europe
Short Samoan Tree Snail		San Clemente Island Blunt-top Snail			Kanab Amber Snail
Partula gibba Partula hebe Partula mirabilis Partula mooreana Partula salifana Partula suturalis Partula taeniata Partula tohiveana Samoana abbreviata Samoana solitaria	Family Amastridae Carelia (all species) Thaanumia sp.	Family Pupillidae Leiostyla abbreviata Leiostyla cassida Leiostyla corneocostata Leiostyla gibba Leiostyla lamellosa Sterkia clementina	Family Vertiginidae Vertigo alabamensis Vertigo angustior Vertigo genesii Vertigo geyeri Vertigo hebardi	Family Clausiliidae Balea perversa	Family Succineidae Catinella arenaria Oxyloma haydeni kanabensis Oxyloma sarsi

South Africa	New Zealand	Tasmania	Galapagos Is New Zealand New Zealand New Zealand	U.S.A. Ireland	U.S.A. Madeira	U.S.A. U.S.A. Western Samoa	U.S.A. U.S.A. U.S.A.
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Plant's Gulella Snail	Kauri Amber Snail	Granulated Tasmanian Snail	Flax Snail	Slug Snail Kerry Slug	Painted Snake-coiled Forest Snail	Iowa Pleistocene Snail	
Family Streptaxidae Gulella plantii	Family Rhytididae Paryphanta busbyi Paryphanta compta Paryphanta fletcheri Paryphanta gilliesi Paryphanta lignaria Paryphanta lignaria Paryphanta traversi	Family Acavidae Anoglypta launcestonensis	Family Bulimulidae Bulimulus (31 endemic species) Placostylus ambagiosus Placostylus bollonsi Placostylus hongii	Family Arionidae Binneya notabilis Geomalacus maculosus	Family Endodontidae Anguispira picta Discus defloratus	Discus guermanus Discus macclintocki Discus marmorensis Thaumatodon hystricelloides	Family Helicodiscidae Helicodiscus diadema Helicodiscus hexodon Polygyriscus virginianus

American Samoa	U.S.A. U.S.A.	U.S.A. U.S.A. U.S.A.	U.S.A.	U.S.A.	U.S.A. U.S.A. U.S.A. V.S.A.	U.S.A. U.S.A.	U.S.A. U.S.A. U.S.A.	U.S.A.	Papua New Guinea	U.S.A. U.S.A. U.S.A. U.S.A.
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Mount Matafao Different Snail		Archer's Toothed Land Snail Noonday Snail	Clench's Middle-toothed Land Snail	Magazine Mountain Middle-toothed Snail	Strange Many-whorled Land Snail Virginia Fringed Mountain Snail	Pilsbry's Narrow-apertured Land Snail	Western Three-toothed Land Snail Flat-spired Three-toothed Snail Karok Indian Snail	Yate's Snail	Manus Green Tree Snail	Idaho Banded Mountain Snail Vortex Banded Mountain Snail Coalville Mountain Snail
Family Helicarionidae Diastole matafaoi	Family Zonitidae Glyphyalinia pecki Paravitrea clappi	Family Polygyridae Ashmunella pasonis Mesodon archeri Mesodon clarki nantahala Mesodon clarki trossulus	Mesodon clenchi Mesodon jonesianus	Mesodon magazınensıs Polygyra hippocrepis	Polygyra peregrina Polygyriscus virginianus Stenotrema hubrichti Stenotrema legi chedumi	Stenotrema pilsbryi Triodopsis mullani magnidentata	Triodopsis occidentalis Triodopsis platysayoides Vespericola karokorum	Family Ammonitellidae Ammonitella yatesi	Family Camaenidae Papustyla pulcherrima	Family Oreohelicidae Oreohelix avaloensis Oreohelix idahoensis idahoensis Oreohelix jugalis intersum Oreohelix jugalis jugalis Oreohelix jugalis vortex Oreohelix peripherica weberiana

	Oreohelix strigosa goniogyra	Carinated Striate Banded Mountain Snail	24 24	U.S.A.	
	Oreohelix waltoni	Walton's Banded Mountain Snail	4 –	U.S.A.	
	Family Helminthoglyptidae Helminthoglypta allynsmithi Helminthoglypta arrosa mattolensis	Allyn Smith's Banded Snail		U.S.A.	
	Helminthoglypta arrosa mtwoka Helminthoglypta arrosa pomoensis Helminthoglypta arrosa williamsi Helminthoglypta callistoderma			U U V.S.A. U S.A.	
	netmining typta monaveana Helminthoglypta nickliniana awania Helminthoglypta nickliniana bridgesi Helminthoglypta nickliniana contracosta Helminthoglypta sequoicola consors	Nicklin's Peninsula Snail		U.S.A. U.S.A. U.S.A.	
	Helminthoglypta traski coelata	Down During	_ ^	U.S.A.	
	neiminnogiypia waikeriana Micrarionta facta	Banded Dune Shail Concentrated Shail	> >	U.S.A.	
-94-	Micraionta feralis	Fraternal Snail		U.S.A.	
	Micrarionta immaculata			U.S.A.	
	Micrarionta indiaensis cathedralis Micrarionta intercisa		— —	U.S.A. U.S.A.	
	Micrarionta morongoana	Colorado Desert Snail		U.S.A.	
	Micrarionta opuntia Micrarionta redimita	Prickly Pear Snail		U.S.A.	
	Micrarionta rowelli bakerensis	California McCow Snail		U.S.A.	
	Monadenia circumcarinata	California McCoy Shan		U.S.A.	
	Monadenia fidelis minor Monadenia fidelis pronotis	Rocky Coast Snail	- -	U.S.A.	
	Monadenia hillebrandi yosemitansis Monadenia hirsutis	Indian Yosemite Snail		U.S.A. U.S.A.	
	Monadenia monbritoni Monadenia mormonum buttoni			U.S.A.	
	Monadenia mormonum hirsuta			U.S.A.	
	Monadenia selosa	Trinity Bristle Snail	, ш	U.S.A.	

I U.S.A. I U.S.A. I U.S.A.	V Madeira I U.S.A.	R France, Spain V U.S.A. V U.S.A.	CT Indo-Pacific CT Indo-Pacific	I U.S.A. E U.S.A. E U.S.A. I U.S.A. E U.S.A.
	Cima Discula Roman Snail	Escargot de Quimper Chittenango Ovate Amber Snail Stock Island Snail	Black-lipped Pearl Oyster Gold-lipped Pearl Oyster	Dwarf Wedge Mussel Wheeler's Pearly Mussel
Monadenis troglodytes Sonorella eremita Sonorella metcalfi	Family Helicidae Caseolus calculus Caseolus commixta Caseolus sphaerula Discula leacockiana Discula tabellata Discula testudinalis Discula turricula Geomitra moniziana Helix subplicata Helix subplicata	Family Elonidae Elona quimperiana CLASS BIVALVIA Succinea chittenangoensis Orthalicus reses	Order PTERIOIDA Family Pteriidae Pinctada margaritifera Pinctada maxima	Order UNIONOIDA Family Unionidae Alasmidonta arcula Alasmidonta atropurpurea Alasmidonta raveneliana Alasmidonta robusta Alasmidonta wrightiana Arasmidonta wrightiana

V U.S.A.	1 C.3.A.	R U.S.A.	E U.S.A.	E U.S.A.	I U.S.A.	E Mexico	E U.S.A.	I U.S.A.	Ex [U.S.A.]	R U.S.A.	E U.S.A.	R U.S.A.	I U.S.A.	Ex? [U.S.A.]	Ex [U.S.A.]	E U.S.A.	E U.S.A.	I U.S.A.	Ex [U.S.A.]	Ex? [U.S.A.]		E U.S.A.	Ex [U.S.A.]	Ex [U.S.A.]	Ex? [U.S.A.]	E U.S.A.	E U.S.A.	E U.S.A.		Ex [U.S.A.]		Ex [U.S.A.]	E U.S.A.	E U.S.A.	E U.S.A.	E Canada, U.S.A.	E U.S.A.	V U.S.A.
James River Spiny Mussel		Savannah Shore Mussel	Birdwing Pearly Mussel Birdwing	Western Fan-shell Pearly Mussel	Eastern Fan-shell Pearly Mussel	Tampico Pearly Mussel	Dromedary Pearly Mussel	Cape Fear Spike Pearly Mussel	Recovery Pearly Mussel	Georgia Spiny Mussel	Tar River Spiny Mussel	Waccamaw Spike	Waccamaw Lake Pearly Mussel	Arc-form Pearly Mussel					Arcuate Pearly Mussel	Curtis Pearly Mussel	Yellow-blossom Pearly Mussel	Acorn Pearly Mussel	Lefevre's Pearly Mussel	Stone's Pearly Mussel	Lewis Pearly Mussel		Southern Acorn Riffle Shell	Penitent Mussel	Fine-rayed Pearly Mussel	Nearby Pearly Mussel	Sampson's Pearly Mussel	Steward's Pearly Mussel	White Cat's Paw Mussel	Purple Cat's Paw Mussel	Green-blossom Pearly Mussel	Tan-blossom Pearly Mussel	Tubercled-blossom Pearly Mussel	Snuffbox
Canthyria collina	Canniford spinosa	Carunculina pulla	Conradilla caelata	Cyprogenia aberti	Cyprogenia irrorata	Cyrtonaias tampicoensis tecomatensis	Dromus dromas	Elliptio marsupiobesa	Elliptio nigella	Elliptio spinosa	Elliptio steinstansana	Elliptio waccamawensis	Elliptio sp.	Epioblasma arcaeformis	Epioblasma biemarginata	Epioblasma brevidens	Epioblasma capsaeformis	Epioblasma curtisi	Epioblasma flexuosa	Epioblasma florentina curtisi	Epioblasma florentina florentina	Epioblasma haysiana	Epioblasma lefevrei	Epioblasma lenior	Epioblasma lewisi	Epioblasma metastriata	Epioblasma othcaloogensis	Epioblasma penita	Epioblasma personata	Epioblasma propinqua	Epioblasma sampsoni	Epioblasma stewardsoni	Epioblasma sulcata delicata	Epioblasma sulcata sulcata	Epioblasma torulosa gubernaculum	Epioblasma torulosa rangiana	Epioblasma torulosa torulosa	Epioblasma triquetra

	E U.S.A.	I U.S.A.		E U.S.A	E U.S.A.	Ex? [U.S.A.[×		_ ×	E U.S.A.		E U.S.A.		E U.S.A.	I U.S.A.	I U.S.A.	I U.S.A.	E Mexico	I U.S.A.	E U.S.A.	Ex [U.S.A.]	E U.S.A.	E U.S.A.			E U.S.A.		E U.S.A.			E U.S.A.	I U.S.A.	I U.S.A.	×			E U.S.A.	I U.S.A.	I U.S.A.
Turgid-blossom Pearly Mussel	Tan Riffle Shell Mussel	Virginia Spiny Mussel	Fine-rayed Pigtoe Pearly Mussel	Shiny Pigtoe Pearly Mussel	Cracking Pearly Mussel			Higgin's Eye Pearly Mussel		Pink Mucket Pearly Mussel		Neosho Pearly Mussel		Alabama Lamp Pearly Mussel		Scale Shell	Slab-side Pearly Mussel	Nicklin's Pearly Mussel	Golf Stick Pearly Mussel	Little Winged Pearly Mussel		White Warty Back Pearly Mussel	Cumberland Pigtoe	Northern Club Shell	Curtus' Mussel	Marshall's Mussel		Rough Pigtoe Pearly Mussel		Judge Tait's Mussel	Fat Pocketbook		Rough Rabbit's Foot Pearly Mussel	Rough Maple Leaf Pearly Mussel	Cumberland Monkeyface Pearly Mussel	Appalachian Monkey Face Pearly Mussel	Stirrup Shell		Salamander Mussel
Epioblasma turgidula	Epioblasma walkeri	Fusconaia collina	Fusconaia cuneolus	Fusconaia edgariana	Hemistena lata	Lampsilis dolabraeformis	Lampsilis fasciola	Lampsilis higginsi	Lampsilis hostonia	Lampsilis orbiculata	Lampsilis perovalis	Lampsilis rafinesqueana	Lampsilis streckeri	Lampsilis virescens	Lasmigona holstonia	Leptodea leptodon	Lexingtoni dolabelloides	Megalonaias nicklineana	Obovaria retusa	Pegias fabula	Plectomeris dombeyana	Plethobasus cicatricosus	Plethobasus cooperianus	Pleurobema clava	Pleurobema curtum	Pleurobema marshalli	Pleurobema oviforme	Pleurobema plenum	Pleurobema rubrum	Pleurobema taitianum	Potamilus capax	Potamilus inflatus	Quadrula cylindrica strigillata	Quadrula fragosa	Quadrula intermedia	Quadrula sparsa	Quadrula stapes	Simponaia ambigua	Simpsoniconcha ambigua

E U.S.A.	R U.S.A. I U.S.A. E U.S.A.	I U.S.A. I Europe V Europe, North America I U.S.A.	I Indo-Pacific K Indo-Pacific V Indo-Pacific V Indo-Pacific K Indo-Pacific I Indo-Pacific I Tasmania I Tasmania
Pale Lilliput Pearly Mussel Choctaw Pearly Mussel	Ortmann's Pearly Mussel Fine-rayed Purple Pearly Mussel Cumberland Bean Pearly Mussel	Spectacle Case Pearly Mussel Spengler's Freshwater Mussel Freshwater Pearl Mussel Alabama Pearl Shell	Horse's Hoof Clam China Clam Crocus Clam Southern Giant Clam Giant Clam Small Giant Clam Scaly Clam
Toxolasma cylindrella Villosa choctawensis	Villosa fabalis Villosa ortmanni Villosa perpurea Villosa trabalis	Family Margaritiferidae Cumberlandia monodonta Margaritifera auricularia Margaritifera margaritifera Margaritifera marrianae	Order VENEROIDA Family Tridacnidae Hippopus hippopus Hippopus porcellanus Tridacna crocea Tridacna gigas Tridacna maxima Tridacna squamosa Tridacna squamosa Family Sphaeriidae Pisidium ultramontanum Family Hyriidae Velesunio moretonicus Family Caryodidae Anoglypta launcestonensis

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Order EUNICIDA

Phylum ANNELIDA

Family Eunicidae Eunice viridis	Palolo Worm	×	Pacific
CLASS HIRUDINOIDEA			
Order ARHYNCHOBDELLAE Family Hirudinidae Hirudo medicinalis	Medicinal Leech	H	Europe
CLASS OLIGOCHAETA			
Order HAPLOTAXIDA Family Megascolecidae Megascolides americanus	Washington Giant Earthworm	Щ	U.S.A.
Megascolides australis Megascolides macelfreshi	Giant Giant Earthworm	> t	Australia
	Oregon Orant Faithworm	ᆈ	U.S.A.
Family Acanthodrillidae	South African Acanthodriline Earthworms		
Chilora (13 species)		>	South Africa
Migracial (10 species)		>	South Africa
Microscolex (9 species)		>	South Africa
Caema (39 species)		>	South Africa

U.S.A.

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South Africa South Africa

South African Giant Earthworms

Family Lutodrilidae
Lutodrilus multivesiculatus

Family Microchaetidae Microchaetus (33 species) Tritogenia (5 species)

Family Komarekionidae

Komarekiona eatoni

V U.S.A.

Phylum ARTHROPODA Subphylum CHELICERATA

CLASS MEROSTOMATA

Coastal waters - Japan to Indonesia Atlantic coast of North America Coastal waters - Japan to Indonesia Coastal waters - Japan to Indonesia	Mexico	Spain Crete	U.S.A.	U.S.A.	Europe	Yugoslavia Yugoslavia Yugoslavia	Northern Europe	U.S.A.
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Horseshoe Crabs	Red-kneed Tarantula				Ladybird Spider	Kocevje Subterranean Spider Kocevje Subterranean Spider Kocevje Subterranean Spider	Great Raft Spider	
Order XIPHOSURA Family Limulidae Carcinoscorpius rotundicauda Limulus polyphemus Tachypleus gigas Tachypleus tridentatus	CLASS ARACHNIDA Order ARANEAE Family Theraphosidae Brachypelma smithi	Family Dipluridae Macrothele calpeiana Macrothele cretica	Family Ctenizidae Cyclocosimia torreya	Family Telemidae Telema (whole genus)	Family Eresidae Eresus niger	Family Linyphiidae Troglophantes gracilis Troglophantes similis Troglophantes spinipes	Family Asauridae Dolomedes plantarius	Family Arancidae Meta dolloff

Bahamas, U.S.A.	U.S.A. U.S.A. U.S.A. U.S.A.	U.S.A.	U.S.A.		U.S.A.	Western North America Czechoslovakia	U.S.A. U.S.A.	Tasmania Tasmania Tasmania
H	田一尺一	—	>		—	<u>-</u> ≃		>>>
	No-eyed Big-eyed Wolf Spider Glacier Bay Wolf Spider		Melones Bay Harvestman	Subphylum CRUSTACEA	Mono Lake Brine Shrimp	Giant Fairy Shrimp		
Family Gnaphosidae Cesonia irvingi	Family Lycosidae Adelocosa anops Lycosa ericeticola Pardosa diuturna Sosippus placidus	Order PSEUDOSCORPIONIDA Family Neobisiidae Microcreagris imperialis	Order OPILIONES Family Phalangodidae Banksula melones	CLASS CRUSTACEA	Order ANOSTRACA Family Artemiidae Artemia monica	Family Branchinectidae Branchinecta gigas Branchinecta paludosa	Order THORACICA Family Balanidae Armatobalanus nefrens Balanus aquila	Order ANASPIDACEA Family Anaspidae Allanaspides helonomus Allanaspides hickmani Anaspides spinulae

V Tasmania V Tasmania	R Tasmania, Australia R Tasmania	V Tasmania	V U.S.A. I Netherlands K Mexico K Mexico K Mexico K Mexico	K Mexico K Mexico K Mexico K Mexico E U.S.A.	V U.K.	I Tasmania	I Tasmania	I Tasmania
		·						
			po					
			Madison Cave Isopod	podos				
			Madison	Socorro Isopod				
Anaspides tasmaniae Paranaspides lacustris	Family Koonungidae Koonunga cursor Micraspides calmani	Family Psammaspididae Eucrenonaspides oinotheke	Order ISOPODA Family Cirolanidae Antrolana lira Arubolana imula Mexilana saluposi Speocirolana affinis Speocirolana interstitialis	Family Sphaeromatidae Thermosphaeroma dugesi Thermosphaeroma milleri Thermosphaeroma smithi Thermosphaeroma subequalum Thermosphaeroma thermophilum	Family Trichoniscidae Metatrichoniscoides celticus	Family Styloniscidae Styloniscus sp.	Family Scyphacidae (Haloniscus searlei)	Family Armadillidae Echinodillo cavaticus

I Tasmania I Tasmania I Tasmania I Tasmania	I U.S.A. I U.S.A. I U.S.A. I U.S.A.	I Mexico R Mexico R Mexico	I U.S.A. I U.S.A. I U.S.A. I U.S.A.	1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A.
	Clifton Cave Isopod Bat Cave Isopod Nickajack Cave Isopod Rye Cove Cave Isopod Lee County Cave Isopod	Parzefall's Stenasellid Wilkens' Stenasellid	Illinois Cave Amphipod Bousfield's Amphipod Noel's Amphipod Diminutive Amphipod Pecos Amphipod	Central Missouri Cave Amphipod Oklahoma Cave Amphipod Pennsylvania Cave Amphipod Florida Cave Amphipod Hobb's Cave Amphipod Tidewater Interstitial Amphipod Arizona Cave Amphipod Balcones Cave Amphipod Balcones Cave Amphipod Balcones Cave Amphipod Clanton's Cave Amphipod Bowman's Cave Amphipod Bowman's Cave Amphipod Bowman's Cave Amphipod Clanton's Cave Amphipod
Family Phreatoicidae Mesacanthotelson setosis Onchotelson brevicaudatus Onchotelson spatulatus Uramphisopus pearsoni	Family Asellidae Caecidotea barri Caecidotea macropoda Caecidotea nickajackensis Lirceus culveri Lirceus usdagalun	Family Stenasellidae Mexistenasellus coahuila Mexistenasellus parzefalli Mexistenasellus wilkensi	Order AMPHIPODA Family Gammaridae Gammarus acherondytes Gammarus bousfieldi Gammarus desperatus Gammarus hyalieioides Gammarus pecos	Family Crangonyctidae Allocrangonyx hubrichti Allocrangonyx pellucidus Crangonyx dearolfi Crangonyx hobbsi Stygobromus araeus Stygobromus arizonensis Stygobromus barri Stygobromus barri Stygobromus bifurcatus Stygobromus clantoni Stygobromus conradi

1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A. 1 U.S.A.	I U.S.A.	
Cooper's Cave Amphipod Cascade Cave Amphipod Elevated Spring Amphipod Greenbrier Cave Amphipod Ephemeral Cave Amphipod Ezell's Cave Amphipod Grady's Cave Amphipod Devil's Sinkhole Amphipod Hara's Cave Amphipod Hara's Cave Amphipod Fickle Spring Amphipod	Malheur Cave Amphipod Tidewater Stygonectid Amphipod Long-legged Cave Amphipod Rubious Cave Amphipod Mackenzie's Cave Amphipod Mountain Cave Amphipod Morrison's Cave Amphipod Bath County Cave Amphipod Onondaga Cave Amphipod Ozark Cave Amphipod Ozark Cave Amphipod Peck's Cave Amphipod Pizzini's Amphipod Reddell's Cave Amphipod Spring Cave Amphipod Stellmack's Cave Amphipod	
Stygobromus cooperi Stygobromus dejectus Stygobromus enarginatus Stygobromus ephemerus Stygobromus flagellatus Stygobromus kadvi Stygobromus hadenoecus Stygobromus harai Stygobromus harai	Stygobromus hubbsi Stygobromus identatus Stygobromus longipes Stygobromus mackenziei Stygobromus montanus Stygobromus mortoni Stygobromus nortoni Stygobromus parvus Stygobromus pecki Stygobromus pecki Stygobromus pizzinii Stygobromus sizinii Stygobromus sutealis Stygobromus sutealis Stygobromus suithii Stygobromus suithii	31780010111113 110115010111111

Hawaii

Kaui Cave Amphipod

Family Orchestiidae Spelaeorchestia koloana

I U.S.A. E U.S.A. I Puerto Rico	I U.S.A. V U.S.A.	CT North Atlantic CT North-east Atlantic CT North-east Atlantic	I U.S.A. V Europe R Europe K Europe K Europe V U.S.A. Ex? [U.S.A.]	I Madagascar
Alabama Cave Shrimp California Freshwater Shrimp Mona Cave Shrimp	Texas Cave Shrimp Florida Cave Shrimp	American Lobster European Lobster Norway Lobster	Big South Fork Crayfish Greensboro Burrowing Crayfish New River Riffle Crayfish Chickamanga Crayfish Obey Crayfish Nashville Crayfish Orlando Cave Crayfish Pee Dee Lotic Crayfish White-clawed Crayfish Shasta Crayfish	Madagascar Freshwater Crayfish
Order DECAPODA Family Atyidae Palaemonias alabamae Syncaris pacifica Typhlatya monae	Family Palaemonidae Palaemonetes antrorum Palaemonetes cummingi	Family Nephropidae Homarus americanus Homarus gammarus Nephrops norvegicus	Family Cambaridae Cambarus batchi Cambarus bouchardi Cambarus catagius Cambarus chasmodactylus Cambarus extraneus Cambarus sophonastes Orconectes jeffersoni Orconectes shoupi Procambarus connus Procambarus lepiclocdactylus Family Astacidae Astacus astacus Austropotamobius torrentium Pacifastacus fortis	Family Parastacidae Astacoides madagascariensis

V Tasmania I Tasmania R West Australia R West Australia	CT New Zealand CT Caribbean CT Caribbean CT Indo-Pacific	R Indo-Pacific	K India, Thailand	K U.S.A.	
Giant Freshwater Crayfish	Rock Lobster Spotted Spiny Lobster	Coconut Crab	Sand Crab	California Bay Pea Crab	
Astacopsis gouldi Astacopsis franklinii Cherax crassimanus Engaewa subcoerulea	Family Palinuridae Jasus edwardsii Panulirus argus Panulirus guttatus Panulirus penicillatus	Family Coenobitidae Birgus latro	Family Hippidae Emerita emeritus	Family Pinnotheridae Parapinnixa affinis	

INSECTS

Subphylum UNIRAMIA

Order THYSANURA

I Hawaii I Hawaii	I Tasmania I Tasmania I Tasmania I Tasmania I Tasmania	Ex [U.S.A.] I U.S.A. I U.S.A. R Australia	I U.S.A.	I U.S.A. I U.S.A.	I U.S.A.	I U.S.A.
Hawaiian Long-palp Bristletail Perkin's Club-palp Bristletail		Pecatonica River Mayfly False Mayfly Diverse Mayfly Large Blue Lake Mayfly	Berner's Two-winged Mayfly	Cahaba Sand-filtering Mayfly Blackwater Sand-filtering Mayfly	Meridion Blackwater Mayfly	American Sand-burrowing Mayfly
Family Machilidae Machiloides heteropus Machiloides perkinsi	Order COLLEMBOLA Family Neanuridae Acanthanura dendyi Acanthanura n.sp. "mesibovi" Megalanura tasmaniae Womersleymeria bicornis Womersleymeria n.sp. "iresoni" Womersleymeria n.sp. "zachariae"	Order EPHEMEROPTERA Family Siphlonuridae Acanthometropus pecatonica Ameletus falsus Isonychia diversa Tasmanophlebia lacus-coerulei	Family Baetidae Heterocleon berneri	Family Oligoneuridae Homoeoneuria cahabensis Homoeoneuria dolani	Family Heptageniidae Pseudirion meridionalis	Family Behningiidae Dolania americana

I U.S.A. I U.S.A. Ex [U.S.A.]	I U.S.A. I U.S.A. I U.S.A.	I U.S.A.	E South Africa E South Africa V Dominican Republic	E Australia	E Australia	E Tanzania	R Guatemala, U.S.A. E Australia	I South Africa E Mauritius	I Angola E Mauritius
Colorado Burrowing Mayfly West Virginia Burrowing Mayfly Robust Burrowing Mayfly	Frison's Mayfly Spicluose Mayfly Argo Mayfly	Yellow Mayfly			Small Damselfly				
Family Ephemeridae Ephemera compar Ephemera triplex Pantagenia robusta	Family Ephemerellidae Ceratella frisoni Ceratella spiculosa Ephemerella argo	Family Caenidae Brachycercus flavus	Order ODONATA Family Synlestidae Ecchlorolestes nylepytha Ecchlorolestes peringueyi Phylolestes ethelae	Family Lestidae Austrolestes minjerriba	Family Hemiphlebiidae Hemiphlebia mirabilis	Family Megapodagrionidae Amanipodagrion gilliesi	Family Protoneuridae Noeneura aaroni Nososticta pilbara	Family Platycnemididae Metacnemis angusta Platycnemis mauricana	Family Coenagrionidae Aciagrion rarum Agriocnemis solitaria

I Cameroon I Sierra Leone I Mozambique V Australia E Austria, Germany, Switzerland V Europe I Tropical Africa	I South Africa V U.S.A. E U.S.A. I Hawaii I Wawaii I Hawaii I Wawaii I Hawaii I U.S.A. I U.S.A. E Turkey, Syria, Jordan	V India, Nepal
Frey's Damselfly Southern Damselfly	Barrens Bluet Damselfly San Francisco Forktail Damselfly Adytum Damselfly Fallax Damselfly Pele Damselfly Waianae Damselfly Jugorum Damselfly Molokai Damselfly Nesiotes Damselfly Nigrohamatum Damselfly Blackline Damselfly Oahu Damselfly Oahu Damselfly Oceanic Damselfly Pacific Damselfly Oceanic Damselfly Orange-black Damselfly	Relict Himalayan Dragonfly
Agriocnemis umbargae Argiagrion leoninium Ceriagrion mourae Coenagrion brisbanense Coenagrion hylas freyi Coenagrion mercuriale	Enallagma polychromaticum Enallagma polychromaticum Enallagma recurvatum Ischnura gemina Megalagrion adytum Megalagrion amaurodytum peles Megalagrion amaurodytum waianaenum Megalagrion ingroum Megalagrion ingrolimeatum Megalagrion nigrolimeatum Megalagrion nigrolimeatum Megalagrion nigrolimeatum Megalagrion pacificum Megalagrion pacificum Megalagrion anducusis Megalagrion anducusis Megalagrion anducusis Megalagrion anducusis Megalagrion anthomelas Mercistogaster asticta Mecistogaster asticta Mecistogaster pronoti Family Calopterygidae Calopteryx angustipennis Calopteryx syriaca	Family Epiophlebiidae Epiophlebia laidlawi

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Antipodogomphus noagknu Cornigomphus guineensis Erpetogomphus lampropeltis Gomphus carolinus

Gomphus carolinus Gomphus consanguis Gomphus diminutus Gomphus geminatus

Gomphus graslini Gomphus hodgesi

Gomphus maxwelli Gomphus modestus

Gomphus ozakensis Gomphus parvidens Gomphus sandrius

Gomphus septima Gomphus townesi

ctinogomphus dobsoni Isomma hieroglyphicum Onychogomphus assimil

Onychogomphus assimilis
Onychogomphus macrodon
Ophiogomphus acuminatus

Ophiogomphus acuminatus Ophiogomphus anomalus

Ophiogomphus cecilia Ophiogomphus edmundo Ophiogomphus howei

Ophiogomphus incurvatus Ophiogomphus i. alleghaniensis

Paragomphus sinaiticus Progomphus bellei Stylurus flavipes Stylurus potulentus Family Neopetaliidae

Stylurus townesi

Family Petaluridae

Sandhills Clubtail Dragonfly Cherokee Clubtail Dragonfly Diminutive Clubtail Twin-striped Clubtail

Tropical Africa

U.S.A. U.S.A.

Australia

Hodge's Clubtail

France, Spain

U.S.A.

U.S.A.

U.S.A.

U.S.A.

U.S.A.

Gulf Clubtail

Tennessee Clubtail Dragonfly Septima's Clubtail Dragonfly Bronze Clubtail Dragonfly Grüne Keiljungter Edmund's Snaketail Dragonfly Howe's Midget Snaketail Dragonfly

Eastern North America

Europe to Siberia

U.S.A.]

U.S.A.

U.S.A.

U.S.A.

lordan, Israel, Turkey

U.S.A.

Turkey, U.S.S.R.

Madagascar

Australia

U.S.A.

U.S.A.

Alleghany Snaketail Dragonfly

Belle's Sand Variegated Clubtail Gomphus à Pattes Jeunes Yellow-sided Clubtail

North Palearctic

J.S.A.

Egypt, Niger

U.S.A.

Tasmania

Australia

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Australia Tanzania U.S.A. Europe to Siberia Tropical Africa Tasmania Belgium, Germany, U.K.	Turkey, U.S.S.R. U.S.A.	New Zealand Australia Madagascar U.S.A. France, Portugal, Spain U.S.A. U.S.A. North Africa, West Europe Canada U.S.A. Eastern North America U.S.A. Tasmania Tasmania Tu.S.A. Tasmania Tasmania Tasmania Tasmania Tasmania Tu.S.A. Tasmania Tasmania Tu.S.A. Tropical Africa Iraq, Israel, Turkey Guinea Bissau
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L'Aeschne Verte (Spring Hawker)	Florida Spiketail Dragonfly	Shining Macromia Dragonfly Wabash Belted Skimmer Dragonfly Apalachicola Twilight Skimmer Dragonfly Orange-spotted Emerald Calverts' Emerald Ohio Emerald Dragonfly Big Thicket Emerald Dragonfly Banded Bog Skimmer Dragonfly
Family Aeshnidae Acanthaeshna-victoria Aeshna meruensis Aeshna persephone Aeshna viridis Anax georgius Austroaeschna hardyi Brachytron pratense Indophlebia asiatica	Family Cordulegastridae Cordulegaster mzymtae Cordulegaster sayi	Family Corduliidae Antipodochlora braueri Austrocordulia territoria Libellulosoma minuta Macromia splendens Macromia splendens Macromia wabashensis Macromia wabashensis Neurocordulia clara Oxygastra curtisii Somatochlora brevicincta Somatochlora hineana Somatochlora nincurvata Somatochlora incurvata Somatochlora incurvata Somatochlora lintenia Somatochlora arangarita Somatochlora incurvata Somatochlora incurvata Somatochlora allinteni Somatochlora previcincta Somatochlora incurvata Somatochlora incurvata Somatochlora incurvata Somatochlora previcincia Somatochlora incurvata Somatochlora previcincia Somatochlora previcincia Somatochlora incurvata Somatochlora previcina Somatochlora previc

Zaire Mozambique, Zimbabwe Europe, West Siberia Europe, West Siberia Japan U.S.A. Angola, Zambia Tropical Africa Gabon [St Helena] Eq. Guinea Sao Tome Eastern Arabia	Puerto Rico	Spain	U.S.A.	U.S.A. U.S.A. New Zealand New Zealand New Zealand New Zealand New Zealand	U.S.A.
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Leucorrhine à Front Blanc Leucorrhine à Large Queue Purple Chaser	Tuna Cave Roach		Mount St Helens' Grylloblattid	Kelso Jerusalem Cricket Port Conception Jerusalem Cricket Herekopare Island Weta Poor Knights Weta Wetapunga Stephens Island Weta Coachella Valley Jerusalem Cricket	Navajo Jerusalem Cricket Arizona Giant Sand Treader Cricket
Congothemis longistyla Eleuthemis beuttikofera quadrigutta Leucorrhinia albifrons Leucorrhinia caudalis Libellula angelina Libellula jerseana Monardithemis flava Orthetrum rubens Palpopleura albifrons Sympetrum dilatatum Trithemis hartvigi Trithemis nigra	Order BLATTARIA Family Blattidae Aspiduchus cavernicola	Order MANTODEA Family Mantidae Apteromantis aptera	Order GRYLLOBLATTARIA Family Grylloblattidae Grylloblatta chirurgica	Order ORTHOPTERA Family Stenopelmatidae Anmopelmatus kelsoensis Anmopelmatus muwu Deinacrida carinata Deinacrida fallai Deinacrida heteracantha Deinacrida tibiospina Stenopelmatus cahuilaensis	Stenopelmatus navajo Family Rhaphidophoridae Daihinibaenetes arizonensis

I U.S.A. I U.S.A. I U.S.A. I Tasmania I U.S.A.	V Spain I Hawaii I U.S.A. I U.S.A. I Hawaii I U.S.A. Ex [U.S.A.] I U.S.A.	I U.S.A.	Hawaii Hawaii Hawaii U.S.A. Hawaii Hawaii Hawaii	I U.S.A. I U.S.A.	I U.S.A. I U.S.A. I Tasmania I U.S.A. I U.S.A.
Kelso Giant Sand Treader Cricket Coachelia Giant Sand Treader Cricket Samwell Cave Cricket Tanner's Black Camel Cricket	Nihoa Banza Conehead Katydid Big Pine Key Conehead Katydid Keys Short-winged Conehead Katydid Remote Conehead Katydid Middlekauf's Shieldback Katydid Antioch Dunes Shieldback Katydid Santa Monica Shieldback Katydid Predatory Bush Cricket	Prairie Mole Cricket	Howarth's Cave Cricket Schauinsland's Bush Cricket Kaumana Cave Cricket Keys Scaly Cricket Oahu Deceptor Bush Cricket Laricis Tree Cricket Volcanoes Cave Cricket Kauai Thin-footed Bush Cricket	Pinaleno Monkey Grasshopper Desert Monkey Grasshopper	Idaho Point-headed Grasshopper Michigan Bog Grasshopper Siskiyou Chloealtis Grasshopper
Macrobaenetes kelsoensis Macrobaenetes valgum Pristoceuthophilus sp. Tasmanoplectron isolatum Utabaenetes tanneri	Family Tettigoniidae Baetica ustulata Banza nihoae Belocephalus micanopy Belocephalus sleighti Conocephaloides remotus Idiostatus middlekaufi Neduba extincta Neduba longipennis	Family Gryllotalpidae Gryllotalpa major	Family Gryllidae Caconemobius howarthi Caconemobius schauinslandi Caconemobius varius Cycloptilum irregularis Leptogryllus deceptor Oecanthus laricis Thaumatogryllus cavicola Thaumatogryllus variegatus	Family Eumastacidae Eumorsea pinaleno Psychomastix deserticola	Family Acrididae Acrolophitus pulchellus Appalachia arcena Calliptamus baiulus Chloaeltis aspasma Spharagemon superbum

I U.S.A. I U.S.A.	Ex [Lord Howe I.]	E St Helena	I U.S.A. I U.S.A.	I Tasmania I Tasmania	I U.S.A.	I U.S.A.	I U.S.A.	I U.S.A. I U.S.A. I U.S.A.	Ex [U.S.A.]	I U.S.A.
Sierra Pygmy Grasshopper Torreya Pygmy Grasshopper	Lord Howe Island Stick-insect	St Helena Earwig	Meltwater Stonefly Wahkeena Falls Flightless Stonefly		Lake Tahoe Benthic Stonefly	Schoolhouse Springs Stonefly	Leon River Stonefly	Cheaha Stonefly Georgia Stonefly Hanson's Appalachian Stonefly	Robert's Stonefly	Fender's Stonefly
Family Tetrigidae Tetrix sierrana Tettigidea empedonepia	Order PHASMATOPTERA Family Phasmatidae Dryococelus australis	Order DERMAPTERA Family Labiduridae Labidura herculeana	Order PLECOPTERA Family Nemouridae Lednia tumana Nemours wahkeena	Family Notonemouridae Kimminsoperla biloba Kimminsoperla williamsi	Family Capniidae Capnia lacustra	Family Leuctridae Leuctra szczytkoi	Family Taeniopterygidae Taeniopteryx starki	Family Perlidae Beloneuria jamesae Beloneuria georgiana Hansonoperla appalachia	Family Chloroperlidae Alloperla roberti	Family Peltoperlidae Soliperla fenderi

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Otway Stonefly	Mount Kosciusko Wingless Stonefly Mount Donna Buang Wingless Stonefly	Swezey's Zoroapteran	Pygmy Hog Sucking Louse	Pulchrus Thread Bug	Smith's Reduviid Bug	Ana Wingless Thread Bug Mount Tantalus Wingless Thread Bug	Robert's Wingless Thread Bug Selium Wingless Thread Bug	Phyllostegian Leaf Bug	Lanai Leaf Bug Oshu Leaf Bug	Manna I oa Seed Bug	Kauai Band-legged Seed Bug	Mount Haleakala Seed Bug	Villosan Flightless Seed Bug	French Frigate Shoal Seed Bug	Necker Goosefoot Seed Bug	Nihoae Seed Bug Necker Buncharass Seed Bug	Dar man senisting toward
Family Eustheniidae Eusthenia nothofagi Eusthania reticulata	Family Gripopterygidae Leptoperla cacuminis Riekoperla darlingtoni	Order ZORAPTERA Family Zorotypidae Zorotypus swezeyi	Order ANOPLURA Family Haematopinidae Haematopinus oliveri	Order HEMIPTERA Family Reduviidae	Sincella smithi	Nesidiolestes ana Nesidiolestes insularis	Nesidiolestes roberti Nesidiolestes selium	Family Miridae Cyrtopeltis phyllostegiae	Kalania hawaiiensis Kalania sp.	Family Lygaeidae	Neseis alternatus	Neseis haleakalae	Nesocryptias villosa.	Nysius frigatensis	Nysius neckerensis	Nysius nihoae Nysius sulfusus	it folia sais mons

Hawaii Hawaii Hawaii	Hawaii Hawaii	U.S.A.	U.S.A.	U.S.A. U.S.A.	U.S.A.	Hawaii Hawaii Hawaii Hawaii	Hawaii Hawaii Hawaii Hawaii Hawaii Hawaii Hawaii
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Bryan's Seed Bug Perkin's Seed Bug Rough-headed Seed Bug	Annectans Bug Hawaiian bug	Aaa Water Treader Bug	Dry Creek Cliff Strider Bug	Ash Meadows Bug Amargosa Bug	Saratoga Springs Bug	Kauai Particoloured Planthopper Wild Cotton Planthopper Lanai Planthopper Lihue Planthopper Barber's Point Planthopper	Mt Tantalus Shortwing Fern Planthopper Iao Valley Planthopper Bridewell's Planthopper Nahiku Planthopper Glenwood Planthopper Kusche's Planthopper Diamond Head Planthopper Long-footed Planthopper Keanae Planthopper
Oceanaides bryani Oceanides perkensi Oceanides rugosiceps	Family Rhopalidae Ithamar annectans Ithamar hawaiiense	Family Mesoveliidae Cavaticovelia aaa	Family Macroveliidae Oravelia pege	Family Naucoridae Ambrysus amargosus Pelocoris shoshone	Family Belostomatidae Belostoma saratogae	Order HOMOPTERA Family Cixiidae Oliarus consimilis Oliarus discrepans Oliarus lanaiensis Oliarus lihue Oliarus myoporicola	Family Delphacidae Nesorestias filicicola Nesosydne acuta Nesosydne bridwelli Nesosydne cyrtandrae Nesosydne kuschei Nesosydne leahi Nesosydne leahi Nesosydne sulcata

V U.S.A. V Canada V U.S.A.	I Tasmania	I U.S.A.	I Tasmania	Ex [Hawaii] Ex [Hawaii]	I Hawaii, U.S.A.	K South & Central Europe	I Hawaii I Hawaii I Hawaii I Hawaii	K Europe K Europe	K Europe K Europe
Cassini Periodical Cicada Decim Periodical Cicada Decula Periodical Cicada		Red-veined Prairie Leafhopper					Haleakala Spongillafly Cooke's Spongillafly Lobe-wing Spongillafly Swezey's Spongillafly Usinger's Spongillafly		
Family Cicadidae Magicicada cassini Magicicada septendecim Magicicada septendecula	Family Tettigarctidae Tettigarcta tormentosa	Family Cicadellidae Felexamia rubranura	Family Aphididae Ceriferella leucopogonis	Family Pseudococcidae Clavicoccus erinaceus Phyllococcus oahuensis	Order NEUROPTERA Family Ithonidae Oliarces clara	Family Mantispidae Mantispa styriaca	Family Hemerobiidae Nesothauma halakalae Pseudopsectra cookeorum Pseudopsectra lobipennis Pseudopsectra swezeyi Pseudopsectra usingeri	Family Ascalaphidae Libelloides libelluloides Libelloides macaronius	Family Myrmeleontidae Acanthaclisis occitanica Dendroleon pantherinus

Europe Hawaii Europe	U.S.A. St Helena Europe, North Africa, U.S.S.R. Europe Italy U.S.A. Malaysia U.S.A.	U.S.A. U.S.A. U.S.A. U.S.A. U.S.A. U.S.A. U.S.A. U.S.A.	U.S.A. U.S.A. U.S.A. U.S.A. North & Central Europe, Siberia
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Molokai Antlion	Beller's Ground Beetle Puppenrauber Blue Ground Beetle Delta Green Ground Beetle Ghost Walker Beetle Schaum's Blue Ridge Ground Beetle	Idaho Dunes Tiger Beetle Cazier's Tiger Beetle Smyth's Tiger Beetle Columbia River Tiger Beetle North-eastern Beach Tiger Beetle Oblivious Tiger Beetle Coral Pink Dunes Tiger Beetle Tiger Beetle Cobblestone Tiger Beetle Los Olmos Tiger Beetle Subtropical Blue-black Tiger Beetle Neojuvenile Tiger Beetle Puritan Tiger Beetle Greenest Tiger Beetle	Hungerford's Crawling Water Beetle Disjunct Crawling Water Beetle Death Valley Diving Beetle Fig Seed Diving Beetle
Distoleon tetragrammicus Eidoleon perjurus Myrmeleon formicarius	Order COLEOPTERA Family Carabidae Agonum belleri Aplothorax burchelli Calosoma sycophanta Carabus intricatus Carabus olympiae Elaphrus viridis Mormolyce phyllodes Sphaeroderus schaumi shenandoah	Family Cicindelidae Cicindela arenicola Cicindela cazieri Cicindela chlorocephala smythi Cicindela chlorocephala smythi Cicindela columbica Cicindela latesignata obliviosa Cicindela limbata albissima Cicindela marginipennis Cicindela narginipennis Cicindela nigrocoerula subtropica Cicindela puritana Cicindela puritana Cicindela puritana Cicindela puritana	Family Haliplidae Brychius hungerfordi Haliplus nitens Family Dytiscidae Agabus rumppi Desmopachria conchramis

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Texas Cave Beetle Elusive Diving Beetle Folkert's Diving Beetle Woolly Diving Beetle Leech's Skyline Diving Beetle Simple Diving Beetle Syangler's Diving Beetle Sulphur Springs Diving Beetle Utah Diving Beetle Utah Diving Beetle Outhous Lake Diving Beetle Narrow-foot Diving Beetle	Travertine Band-thigh Diving Beetle Sylvan Diving Beetle Red Hills Unique Whirligig Beetle Maureen's Moss Beetle Animas Minute Moss Beetle Texas Minute Moss Beetle Utah Minute Moss Beetle Wing-shoulder Minute Moss Beetle Indiana Minute Moss Beetle Wilbur Springs Minute Moss Beetle	Blind Cave Beetle American Burying Beetle Leech's Water Scavenger Beetle Utah Water Scavenger Beetle Arizona Water Scavenger Beetle
Graphoderus bilineatus Haideoporus texanus Hydroporus elusivus Hydroporus polkertsi Hydroporus leechi Hydroporus simplex Hydroporus sulphurius Hydroporus sulphurius Hygrotus artus Hygrotus dahensis Hygrotus diversipes	Hygrotus fontinalis Hygrotus sylvanus Family Gyrinidae Spanglerogyrus albiventris Gymnocthebius maureenae Hydraena maureenae Limnebius aridus Limnebius texanus Limnebius texanus Ochthebius crassalus Ochthebius reticulatus	Family Lelodidae Glacicavicola bathysciodes Family Silphidae Nicrophorus americanus Family Hydrophilidae Chaetarthria leechi Chaetarthria utahensis Cymbiodyta arizonica

U.S.A. U.S.A.	Hawaii New Zealand New Zealand	U.S.A.	Sardinia	₹	U.S.A.	U.S.A.	U.S.A.	U.S.A.	U.S.A.	U.S.A.	U.S.A.	U.S.A.	USA	U.S.A.	Caribbean & Northern South America	Trinidad & Tobago	Martinione St I nois	U.S.A.	U.S.A.	U.S.A.	U.S.A.	U.S.A.	U.S.A. Reunion	•
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Ricksecker's Water Scavenger Beetle Seclusive Water Scavenger Beetle	Kauai Flightless Stag Beetle	Caracara Commensal Scarab Beetle		Ciervo Scoral Bootle	Cresent Dune Scarab Beetle	Hardy's Scarab Beetle	Large Scarab Beetle Exignous Scarab Reetle	Archbold Scarab Beetle	Tibial Scarab Beetle	Ford's Beetle	Lortoise Commensal Scarab Beetle	Woodruff's Dung Beetle	Tortoise Commensal Scarab Beetle	Miami Roundhead Scarab Beetle	Hercules Beetle	Hercules Beetle Hercules Reetle	Hercules Beetle	Kelso Dune Scarab Beetle	Spiny Florida Sandhill Scarab Beetle	White Sand Bear Scarab Beetle	Pacific Sand Bear Scarab Beetle	Scrub Island Burrowing Scarab Beetle	Tortoise Commensal Scarab Beetle	
Hydrochara rickseckeri Paracymus seclusus	Family Lucanidae Apterocychus honoluluensis Dorcus auriculatus Dorcus ithaginis	Family Trogidae Trox howelli	Family Geotrupidae Typhaeus hiostius	Family Scarabaeidae	Aegialia crescenta	Aegialia nacenifica	Anomala exigua	Anomala eximia	Anomala tibialis	Aphodius fordi	Appoalus trogicaries Atapnius superficialis	Ataenius woodruffi	Copris gopheri	Cyclocephala miamiensis	Dynastes hercules	Dynasies nercules glaseri Dynasies hercules hercules	Dynastes hercules reidi	Glaresis arenata	Gronocarus multispinosus	Lichnanthe albopilosa	Mysoleums nodoslow	Onthophagus furacatus	Onthophagus polyphemi Oryctes chevrolati	

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Hermit Beetle Ocala Burrowing Scarab Beetle Woody Gulf Dune Scarab Beetle Saline Valley Snow-front Scarab Spotted Warner Valley Dunes Scarab Barbate Scarab Beetle Atascodera Scarab Beetle Cromwell Chafer Giuliani's Dune Scarab Beetle Frost's Spring Scarab Beetle Tantula Scarab Beetle Scrub Palmetto Flower Scarab Beetle	Goldstreifiger Wawawona Riffle Beetle Parker's Riffle Beetle Brownish Riffle Beetle Giuliani's Riffle Beetle Little Riffle Beetle Robust Riffle Beetle	Marron's San Carlos Riffle Beetle Brown's Riffle Beetle Brown's Riffle Beetle Pinnacles Riffle Beetle Scott Riffle Beetle Devil's Hole Warm Spring Riffle Beetle Moapa Warm Springs Riffle Beetle Douglas Riffle Beetle Gammon's Riffle Beetle Warm Spring Riffle Beetle	Beer's False Water Penny Beetle Burnell's False Water Penny Beetle Stark's False Water Penny Beetle
Osmoderma eremita Peltotrupes youngi Polylamina pubescens Polyphylla anteronivea Polyphylla avittata Polyphylla barbata Polyphylla hubila Prodontria lewisi Pseudocotalpa giulianii Serica frosti Serica tantula Trigonopelastes floridana	Family Buprestidae Buprestis splendens Family Elmidae Atractelmis wawona Cylloepus parkeri Dubiraphia brunnescens Dubiraphia parva Dubiraphia siulianii Dubiraphia sienhani	Huleechius marroni carolus Microcylloepus browni Optioservus browni Optioservus canus Optioservus phaeus Stenelmis calida moapa Stenelmis douglasensis Stenelmis gammoni Zaitzeva thermae	Family Psephenidae Acneus beeri Acneus burnelli Alabamaubria starki

U.S.A. U.S.A. U.S.A.	Chatham Is, New Zealand New Zealand Canada, U.S.A. Hawaii Hawaii	U.S.A.	U.S.A. U.S.A.	Hawaii	Northern & Central Europe	Mexico, U.S.A. U.S.A. Seychelles	U.S.A. U.S.A. Mexico, U.S.A. U.S.A. U.S.A.
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Variegated False Water Penny Beetle Arizona Water Penny Beetle White Mountains Water Penny Beetle	Hatch's Click Beetle Hawaiian Click Beetles Necker Click Beetles	Dohrn's Elegant Eucnemid Beetle	Florida Intertidal Firefly Everglades Browing Firefly	Piko Anobiid Beetle	Scharlachkäfer	Globose Dune Beetle San Joaquin Dune Beetle Frigate Island Giant Tenebrionid Beetle	Hopping's Blister Beetle Mojave Desert Blister Beetle Anthony Blister Beetle Moestan Blister Beetle Molestan Blister Beetle Morrison's Blister Beetle
Dicranopselaphus variegatus Psephenus arizonensis Psephenus montanus	Family Elateridae Amychus candezei Amychus granulatus Eanus hatchi Eopenthes (17 species) Itodacnus (whole genus)	Family Eucnemidae Paleoxenus dohmi	Family Lampyridae Micronaspis floridana Photuris brunnipennis floridana	Family Anobiidae Holcobius pikoensis	Family Cucujidae Cucujus cinnaberinus	Family Tenebrionidae Coelus globosus Coelus gracilis Polposipus herculeanus	Family Meloidae Lytta hoppingi Lytta inseperata Lytta mirifica Lytta moesta Lytta molesta Lytta morrisoni

Family Anthicidae Anthicus antiochensis Anthicus sacramento	Antioch Dunes Beetle Sacramento Beetle		U.S.A. U.S.A.
Family Cerambycidae Aeschrithmysus dubaulianus Aeschrithmysus swezeyi		ыыг	Hawaii Hawaii Hawaii
Cerambyx cerdo Crossidius mojavensis mojavensis Desmocerus californicus dimorphus	Cerambyx Longicorn Mojave Rabbitbrush Longhorn Beetle Valley Elderberry Longhorn Beetle	иши>	Central & Northern Europe U.S.A.
Dryobius sexnolaius Macrodontia cervicornis Morimus funereus	Six-banded Longhorn Beetle	— Ж ш	U.S.A. Brazil, Peru Central Europe, U.S.S.R.
Necydalis rudei Nesithmysus bridwelli Nesithmysus frobesi Nesithmysus swezeyi Plagithmysus (49 species)	Rude's Longhorn Beetle	™ 田 田 田 田 田	Hawaii Hawaii Hawaii Hawaii Hawaii
Rosalia alpina Xylotoles costatus	Rosalia Longicorn	EX	Central & Northern Europe [Chatham Is]
Family Chrysomelidae Donacia idola	Bog Idol Leaf Beetle	-	U.S.A.
Family Aglycyderidae Proterhinus (72 species)	Hawaiian Proterhinus Beetles	ы	Hawaii
Family Curculionidae Anagotus fairburni Anagotus turbotti Deinocossonus nesiotes Dryophthorus distinguendus Dryotribus mimeticus	Flax Weevil Turbott's Weevil Oahu Nesiotes Weevil Antioch Dune Weevil	L E E E < <	New Zealand New Zealand Hawaii [Hawaii] [Hawaii] U.S.A.

Tasmania

Apteropanorpa tasmanica

Gymnopholus lichenifer	Lichen Weevil	> >	Papua New Guinea
naaramphus spinipennis Hadramphus stilbocarpae		> >	Chatham Is New Zealand
Hadramphus tuberculatus		>	New Zealand
Heteramphus filicum		Э	Hawaii
Heterexis seticostatus		>	New Zealand
Lyperobius huttoni	Speargrass Weevil	>	New Zealand
Macrancylus linearis		Ex	[Hawaii]
Megacolabus sculpturatus		>	New Zealand
Microcryptorhynchus orientissimus		R	Henderson I.
Miloderes nelsoni	Nelson's Weevil	_	U.S.A.
Miloderes rulieni	Rulien's Weevil	-	U.S.A.
Nesotocus giffordi	Gifford's Weevil	_	Hawaii
Nesotocus kauaiensis	Kauai Weevil	П	Hawaii
Nesotocus munroi	Munro's Weevil	_	Hawaii
Nothaldonis peaci		Щ	New Zealand
Oclandius laeviusculus		>	New Zealand
Oedemasylus laysanensis		Ex	[Hawaii]
Onchobarus langei	Lange's El Segundo Dune Weevil		U.S.A.
Oodemas (whole genus)	Windward Chain Weevils	-	Hawaii
Pentarthrum blackburni	Blackburn's Weevil	Ex?	[Hawaii]
Pentarthrum obscura	Obscure Weevil	-	Hawaii
Pentarthrum pritchardias		Э	Hawaii
Rhyncogonus hendersoni		R	Henderson I.
Rhyncogonus (22 species)	Hawaiian Snout Beetles	ш	Hawaii
Stenotrupis pritchardiae	Nihoa Weevil	—	Hawaii
Trigonoscuta brunnotesselata	Brown-tassel Weevil	_	U.S.A.
Trigonoscuta dorothea dorothea	Dorothy's El Segundo Dune Weevil	_	U.S.A.
Trigonoscuta doyeni	Doyen's Dune Weevil	E/V	U.S.A.
Trigonoscuta rossi	Fort Ross Weevil	Ex?	[U.S.A.]
Trigonoscuta yorbalindae	Yorba Linda Weevil	Ex?	[U.S.A.]
Unas piceus		>	New Zealand
Order MECOPTERA			
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Sugarfoot Moth Fly		Giant Torrent Midge Tasmanian Torrent Midge	Ross's Apatalestes Tabanid Fly Florida Asaphomyian Tabanid Fly Texas Asaphomyian Tabanid Fly Belkin's Dune Tabanid Fly Brown Merycomyian Tabanid Fly Volutine Stoneyian Tabanid Fly	Mary Alice's Small-headed Fly	Antioch Robberfly Antioch Robberfly Hurd's Robberfly	Valley Mydas Fly	Hawaiian Dance Fly		Delong's Flower Fly
Order DIPTERA Family Psychodidae Nemapalpus nearcticus	Family Mycetophilidae Arachnocampa tasmaniensis	Family Blephariceridae Edwardsina gigantea Edwardsina tasmaniensis	Family Tabanidae Apatalestea rossi Asaphomyia floridensis Asaphomyia texanus Brennania belkini Merycomyia brunnea Stonemyia volutina	Family Acroceridae Eulonchus marialiciae	Family Asilidae Cophura hurdi Efferia antiochi Metapogon hurdi	Family Apiocertidae Raphiomydas triochilus	Family Empididae Chersodromia hawaiiensis	Family Dolichopodidae Campsicnemus mirabilis	Family Syrphidae Mixogaster delongi

I Hawaii	Ex [Hawaii]	I U.S.A.	I U.S.A. Ex [U.S.A.]	I U.S.A. I U.S.A. I U.S.A.	I U.S.A. I U.S.A. I U.S.A.	I U.S.A. I U.S.A. I U.S.A. I U.S.A.	I U.S.A.
Nihoa Two-spotted Asterid Fly		Wilber Springs Shore Fly	Alexander's Caddisfly Castle Lake Caddisfly Obrien Caddisfly	Fender's Caddisfly Haddock's Caddisfly Castle Crags Caddisfly	Bilobed Caddisfly Spiny Caddisfly One-spot Caddisfly	Artesian Caddisfly Denning's Caddisfly Arkansas Caddisfly San Marcos Caddisfly	Knoxville Micro Caddisfly Kite's Micro Caddisfly Alsea Micro Caddisfly Contorted Micro Caddisfly Deschutes Micro Caddisfly Provost's Micro Caddisfly Vertree's Micro Caddisfly Florida Micro Caddisfly
Family Asteiidae Bryania bipunctata	Family Drosophilidae Drosophila lanaiensis	Family Ephydridae Paracoenia calida	Order TRICHOPTERA Family Rhyacophilidae Rhyacophila alexandra Rhyacophila amabilis Rhyacophila colonus	Rhyacophila fenderi Rhyacophila haddocki Rhyacophila lineala	Rhyacophila mosana Rhyacophila spinata Rhyacophila unipunctata	Family Glossosomatidae Agapetus artesus Agapetus denningi Agapetus medicus Protoptila arca	Family Hydrotilidae Hydroptila decia Neotrichia kitae Ochrotrichia alsea Ochrotrichia phenosa Ochrotrichia provosti Ochrotrichia vertreesi Oxyethira florida

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	Cascades Caddistly Kings Canyon Caddisfly	Blue Mountains Caddisfly	Oregon Caddisfly	King's Creek Caddistly	Green Springs Mountain Caddistry	Tombaton Desimin Coddieffy	Missouri Caddieff	Missouri Caddistry Klamath Caddisfly	Fort Dick Caddisfly	Colombian Gorge Caddisfly	Tombstone Prairie Oligophlebodes	Clatsop Caddisfly	Three-tooth Caddisfly								Fischer's Caddisfly	Goeden's Caddistly							Zigzag Blackwater Caddisfly
Family Philopotamidae	Apalania tavala	Cryptochia neosa	Dolophilodes oregona	Ecclisomyia bilera	Farula davisi	raruta Jewelli	Farula reapert	Giypnopsyche missouri Linmenhilus alconura	Linmephilus atercus	Neothramma andersoni	Oligophlebodes mostbento	Philocasca oron	Triaenodes tridonata	Family Stenopsychidae	Stenopsychodes lineata	Family Polycontropodidee	Tasmanoplegas spilota	Family Limnephilidae	archaeophyrax vernaris	Family Lepidostomatidae	Lepidostoma fischeri	Lepidosioma goedem	Family Kokiriidae	Taskiria mecubbini	Taskropsyche lacustris	Family Plectrotarsidae	Nanoplectrus truchanasi	Family Soricoctomotidae	Agarodes ziczac

I U.S.A.	I Tasmania	I U.S.A. I U.S.A. I U.S.A. Ex [U.S.A.] I Tasmania	V South Africa V Australia	Ex? [U.S.A.] Ex? [U.S.A.]	Ex? [U.S.A.]	I Hawaii E Hawaii	Ex? [U.S.A.]	V New Zealand	I Hawaii	Ex? [U.S.A.]
		Florida Longhorn Caddisfly Vertree's Caddisfly Little Longhorn Caddisfly Athens Caddisfly	Silver Spotted Ghost Moth Bent Wing Swift Moth	American Chestnut Moth Phleophagan Chestnut Moth	Chestnut Clearwing Moth	Necker Leaf-miner Moth			Green Carposinid Moth	Chestnut Ermine Moth
Family Odontoceridae Psilotreta hansoni	Family Philorheithridae Ramiheithrus kocinus	Family Leptoceridae Ceraclea floridana Ceraclea vertreesi Oecetis parva Triaenodes phalacris	Order LEPIDOPTERA Family Hepialidae Leto venus Zelotypia stacyi	Family Nepticulidae Ectodemia castaneae Ectodemia phleophaga	Family Tischeriidae Tischeria perplexa	Family Gracillariidae Petrochroa neckerensis Phildoria wilkesiella	Family Coleophoridae Coleophora leucochrysella	Family Gelechiidae Kiwaia jeanae	Family Carposinidae Heterocrossa viridis	Family Argyresthiidae Argyresthia castaneela

I U.S.A.	R U.S.A. I Hawaii I Hawaii	I U.S.A.	I Tasmania V Central & North Europe R Costa Rica, Panama			E U.S.A. I Tasmania	V South Africa V South Africa	V South Africa I Tasmania	V U.S.A., Mexico		I Comania, Southern U.S.S.R.	K Balkans, Southern U.S.S.R., Ir V South Africa	I U.S.A.
Chestnut Clearwing Moth	San Francisco Tree Lupine Ohe Ohe Leaf-roller Moth Green-banded Ohe Ohe Leaf-roller Moth Wallupe Leaf-roller Moth	Busk's Gall Moth	Chequered Skipper Eight Spotted Skipper		Skipper Dakota Skipper	Pawnee Montane Skipper	Barber's Ranger	Bamboo Sylph	Wandering Skipper Salt March Skipper	Rare Skipper	Wandering Skipper Spinose Skipper	Tessellated Skipper Dickson's Sylph	Maculated Manfreda Skipper
Family Sesiidae Synanthedon castaneae	Family Tortricidae Grapholitha edwardsiana Spheterista oheoheana Spheterista pterotropiana Spheterista reynoldsiana	Family Cochylidae Carolella busckana	Family Hesperiidae Antipodia chaostola leucophaea Carterocephalus palaemon	Epargyreus antaeus Epargyreus spana	Euscheman rafflesia Hesperia dacotae	Hesperia pawnee montana Hesperilla mastersi marakupa	Kedestes barerae bunta Kedestes chaca	Metisella syrinx Oreisplanus munionga larana	Panoquina errans	Problema buienta	Pseudocopaeodes eunus eunus Syrichtus cribrellum	Syrichtus tessellum Tsitana dicksoni	Family Megathymidae Stallingsia maculosus

Iran

	V Fhilippines R Mexico V Hispaniola K Bhutan		E Brazil V Jamaica R Taiwan V Sri Lanka		R Bougainville, Solomon Is Philippines R Bougainville, Solomon Is I Sabah V Philippines R Moluccas	China Japan, Taiwan Moluccas	E Papua New Guinea I New Guinea V Moluccas V New Guinea	I New Guinea I Irian Jaya K Irian Jaya R Sabah, Sarawak R Central & West Africa
Sri Lankan Rose	Short-horned Baronia Zetides Swallowtail Ludlow's Bhutan Swallowtail	wallowtail Iowtail	Jamaican Kite Sri Lankan Five-bar Swordtail		Meek's Graphium	Chinese Luehdorfia Japanese Luehdorfia	Birdwing	Paradise Birdwing Rothschild's Birdwing I African Giant Swallowtail
Family Papilionidae Archon apollinaris Atrophaneura atropos Atrophaneura jophon Atrophaneura palu	Atrophaneura scnadenbergi Baronia brevicornis Battus zetides Bhutanitis ludlowi	Bhutanitis mansfieldi Bhutanitis thaidina Eurytides iphitas	Eurytiaes tystinous narristanus Eurytiaes marcellinus Graphium alebion chungianus Graphium antiphates cevlonicus	Graphium aurivilliusi Graphium epaminondas Graphium idaeoides Graphium levassori	Graphium meeki Graphium meeki Graphium mendana Graphium procles Graphium sandawanum Graphium stresemanni	Luehdorfia chinensis Luehdorfia japonica Ornithoptera aesacus	Ornithoptera alexandrae Ornithoptera chimaera Ornithoptera croesus Ornithoptera meridionalis	Ornithoptera paradisea Ornithoptera rothschildi Ornithoptera tithonus Papilio acheron Papilio antimachus

E U.S.A.	I Comoro Is	I Hispaniola	V Philippines		V Philippines	E Philippines	E Kenya	V Mexico	K South America	R Madagascar	V Argentina, Brazil	E Jamaica	E Corsica, Sardinia	R Sulawesi	V Burundi, Rwanda, Uganda	R Madagascar	I Mauritius	V Taiwan	K French Guiana	V Bismarck Arch.	V Madagascar	V Lesser Sunda Is	V Philippines	V Reunion	Ex [Seychelles]	R Tanzania	R Bougainville, Solomon Is	R Bismarck Arch.	V Brazil	V Brazil	K French Guiana	R Brazil	K Venezuela	K Brazil	K Bolivia	R Europe & U.S.S.R. to China	E F.R.G.	R Afghanistan, Tadzhikistan
Schaus' Swallowtail	:	Scarce Haitian Swallowtail		Poey's Black Swallowtail			Taita Blue-banded Papilio					Homerus Swallowtail	Corsican Swallowtail	Jordan's Swallowtail	Cream-banded Swallowtail						Madagascan Emperor Swallowtail			Papillon La Pature		Kilimanjaro Swallowtail			Fluminense Swallowtail			Hahnel's Amazonian Swallowtail				Apollo		
Papilio aristodemus ponceanus	Papilio aristophontes	Papilio aristor	Papilio benguetanus	Papilio caiguanabus	Papilio carolinensis	Papilio chikae	Papilio desmondi teita	Papilio esperanza	Papilio garleppi	Papilio grosesmithi	Papilio himeros	Papilio homerus	Papilio hospiton	Papilio jordani	Papilio leucotaenia	Papilio mangoura	Papilio manlius	Papilio maraho	Papilio maroni	Papilio moerneri	Papilio morondavana	Papilio neumoegeni	Papilio osmana	Papilio phorbanta	Papilio phorbanta nana	Papilio sjoestedti	Papilio toboroi	Papilio weymeri	Parides ascanius	Parides burchellanus	Parides coelus	Parides hanneli	Parides klagesi	Parides pizarro	Parides steinbachi	Parnassius apollo	Parnassius apollo vinningensis	Parnassius autocrator

I U.S.A. Ex [U.S.A.] K China R India to China E Taiwan I Sabah, Sarawak V Sulawesi I Moluccas	I Canada, U.S.A. E South Africa I U.S.A. R Zimbabwe R India	ි ද	V U.S.A. Ex [U.S.A.] Ex? [U.S.A.]
Shepard's Clodius Parnassian Strobbeen's Clodius Parnassian Golden Kaiser-I-Hind Kaiser-I-Hind Talaud Black Birdwing	West Virginia White Andrew's Marble Butterfly	Lion's Head Copper Lion's Head Copper San Bruno Elfin Drakensburg Copper	Florida Atala Hairstreak Texas Tailed Blue Palos Verdes Blue
Parnassius clodius shepardii Parnassius clodius strohbeeni Teinopalpus aureus Teinopalpus imperialis Troides aeacus kaguya Troides andromache Troides prattorum	Family Pieridae Artogeia virginiensis Belenois orgygia Euchloe hyantis andrewsi Mylothris carcassoni Pieris krueperi devta	Family Lycaenidae Alaena margaritacea Aloeides caledoni Aloeides dentatis Aloeides egerides Aloeides lutescens Aloeides lutescens Argyrocupha malagrida malagrida Argyrocupha malagrida paarlensis Callophrys mossii bayensis Callophrys penningtoni Chrysoritis cotrelli Chrysoritis zeuxo Cyclyrius mandersi Deloneura immaculata Deloneura millari millari Deudorix vansoni Deudorix vansoni Durbania limbata Erikssonia acraeina	Eumaeus atala florida Everes comyntas texanus Glaucopsyche lygdamus palosverdesensi

Mozambique, South Africa Surope & Northern Asia South & Central Europe China, Japan, U.S.S.R. China, Japan, U.S.S.R. Northern Europe Europe, U.S.S.R. Europe, U.S.S.R. Surope, U.S.S.R. J.S.A., Mexico South Africal South Africa U.S.A. U.S.A. J.S.A. J.S.A. U.S.A. rance J.S.A. J.S.A. U.S.A. J.S.A. U.S.A. lapan ndia ndia Spain Ex? Miami Blue Butterfly Tsomo River Copper Moro Blue Bay Blue Greater Large Blue Greater Large Blue Rebel's Large Blue Dusky Large Blue Scarce Large Blue Scarce Large Blue Alcon Large Blue Naga Hedge Blue San Emigdio Blue Clayton's Copper Dickson's Copper Hermes Copper Wineland Blue Jarge Copper White Mimic Mission Blue 30hart's Blue Mission Blue Failless Blue Karner Blue Nevada Blue Kerces Blue Pheres Blue Large Blue otis Blue Ornipholidotos peucetia penningtoni Lepidochrysops methymna dicksoni Hemiargus thomasi bethune-bakeri Maculinea arionides matsumara caricia icarioides missionensis Plebe jus icarioides missionensis Maculinea teleius burdigalensis philotiella speciosa bohartorum Lycaeides argyrognomon lotis caricia icarioides moroensis Lepidochrysops loewensteini Lycaeides melissa samuelis epidochrysops hypopolia caricia icarioides pheres Panchala ganesa loomisi Lepidochrysops ariadne Lepidochrysops bacchus Lycaena dorcas claytoni Lepidochrysops lotana Notarthrinus binghami Poecilmitis lyncurium Poecilmitis endymion Maculinea nausithous Glaucopsyche xerces Lepidochrysops titei Maculinea arionides Plebe jus emigdionis Oxychaeta dicksoni Poecilmitis aureus oecilmitis adonis Oreolyce dohertyi Maculinea teleius Maculinea rebeli Plebicula golgus Maculinea arion ycaena hermes Maculinea alcon Lycaena dispar

V South Africa V South Africa I Tasmania	V South Africa E U.S.A.	I U.S.A.	I U.S.A.	I U.S.A. V Tanzania	I U.S.A.	K U.S.A. V South Africa	V South Africa V South Africa	V South Africa
Blue Jewel Copper	White Spotted Sapphire El Segundo Blue	Comstock's Blue Smith's Blue	Langston's Blue	Mattoni's Blue	Bartram's Hairstreak	Avalon Hairstreak Dickson's Thestor	Kaplan's Thestor	Wallengren's Copper
Poecilmitis nigricans Poecilmitis rileyi Pseudalmenus chlorinda chlorinda Pseudalmenus chlorinda conara	Pseudiolaus Iulua Shi jimiaeoides battoides allyni	Shi jimiaeoides battoides comstocki Shi jimiaeoides enoptes smithi	Shijimiaeoides langstoni langstoni	Spindasis collinsi	Strymon acis bartrami	Strymon avaiona Thestor dicksoni dicksoni	Thestor kaplani Thestor tempe	Trimenia wallengrenii Uranothauma usambarae

Ex [Mauritius]

Comoro Is, Madagascar Hispaniola, Jamaica Cuba, Hispaniola Cuba, Hispaniola Bismarck Arch. Bismarck Arch. Philippines Hispaniola Comoro Is Mauritius Irian Jaya Indonesia Indonesia Sulawesi Sulawesi Cuba **RRRRRRKKKKKKKKK**

Family Danaidae (or Nymphalidae: Danainae)
Amauris comorana
Amauris pheodon
Anetia briarea
Anetia briarea
Anetia jaegeri
Anetia pantheratus
Danaus cleophile
Euploea albicosta
Euploea caespes
Euploea configurata

Euploea dentiplaga

Euploea doretta Euploea eboraci

Euploea cordelia

Family Libytheidae

Libythea cinyras

Mauritius, Reunion, Rodrigues Bougainville, Solomon Is Bismarck Arch. Bismarck Arch. Bismarck Arch. New Caledonia lava, Sumatra New Guinea Philippines Philippines Philippines Philippines Philippines Philippines Philippines Irian Jaya Seychelles Sri Lanka Irian Jaya rian Jaya ndonesia Indonesia ndonesia Sri Lanka Sulawesi Sulawesi Sulawesi Sulawesi Sulawesi Sulawesi Sulawesi Sumatra Sumatra Sulawesi Borneo India India Java Java Sulawesi Tree Nymph Parantica pseudomelaneus varantica kuekenthali Darantica menadensis Darantica nilgiriensis arantica garamantis Euploea latifasciata Parantica sulewattan Parantica taprobana Parantica milagros Parantica rotundata Parantica schoenigi Euploea tripunctata Parantica tityoides deopsis hewitsonii Parantica crowleyi parantica dannatti 'dea tambusisiana deopsis oberthurin Parantica pumila Darantica marcia Parantica toxopei deopsis klassika Parantica clinias Euploea gamelia Parantica albata parantica kirbyi dea malabarica Parantica davidi Euploea martinii Darantica philo Darantica phyle Euploea eupator Euploea euphon Euploea magou Euploea tobleri Euploea lacon Euploea mitra dea iasonia 'dea electra

Tirumala euploeomorpha Tiradelphe schneideri Protoploea apatela Tirumala gautama Parantica wegneri Parantica weiskei

Family Satyridae (or Nymphalidae: Satyrinae)

False Ringlet Coenonympha oedippus

Erebia annada annada Erebia gorgone Erebia christi

Erebia narasingha narasingha

Erebia ottomana

Erebia scipio

Erebia sthennyo Erebia sudetica

Raetzer's Ringlet Gavarnie Ringlet

Ottoman Brassy Ringlet

False Dewy Ringlet Larche Ringlet

Scarce Red Forester Sudeten Ringlet

Pararge menava maeroides

Ypthima dohertyi persimilis Stygionympha dicksoni

Dickson's Brown

Florida Leafwing Family Nymphalidae (or Nymphalidae: Nymphalinae) Anaea floridalis

Antanartia borbonica mauritiana Antanartia borbonica

Apaturopsis pauliani Apaturopsis kilusa

Cercyonis sthenele sthenele Apodemia mormo langei Boloria acrocnema Charaxes cowani

Uncompahgre Fritillary Butterfly Sthenele Wood Nymph Lange's Metalmark

R R R R R R R

New Guinea Solomon Is

New Guinea

Indonesia

Solomon Is

Indochina, China, Malaysia

Europe & Northern Asia

Italy, Switzerland Bhutan, India

France

Southern Europe France, Italy India

France, Spain Europe

Bhutan, India Burma, India

India

Bhutan, India India

Bhutan, India

Bhutan, Burma, India India

South Africa

India

Burma, India

Madagascar, Mauritius, Reunion Mauritius

Madagascar

Madagascar U.S.A. U.S.A. U.S.A.

Madagascar

Lethe europa tamuna Lethe gemina gafuri

Lethe dura gammiei

Lethe distans

Lethe ocellata lyncus

Lethe raniadeva

Lethe satvavati

Lethe margaritae

V South Africa I Kenya R Burma, India V South Africa V Tanzania V Kenya V South Africa				R China, India, Sikkim R Madagascar R Sikkim R Andaman Is I Madagascar E Seychelles	I Madagascar, Mauritius I Madagascar, Reunion Ex [Mauritius] I Japan, Taiwan
Silver Barred Charaxes Chestnut Rajah Western Forest Emperor	Andaman Leafwing	Bay Checkerspot Butterfly Mono Checkerspot Butterfly Mottled Green	Corsican Fritillary Natterer's Longwing Scarce Fritillary	Pale Hockeysticker Sailer	Salamis Retrecie
Charaxes druceanus entabeni Charaxes druceanus williamsi Charaxes durnfordi nicholi Charaxes karkloof capensis Charaxes marieps Charaxes usambarae Charaxes xiphares desmondi Charaxes xiphares desmondi	Cymothoe amaniensis Cymothoe aurivillii Cymothoe magambae Cymothoe melanjae Cymothoe teita	Euphydryas editha hayensis Euphydryas editha monoensis Euryphura achlys Euthalia malapana Euxanthe madagascariensis	Fabriciana elisa Heliconius charltonius peruvianus Heliconius nattereri Heteronympha cordace comptena Hypodryas maturna Hypolimnas antevorta Hypolimnas dubius drucei	Neptis manasa Neptis metella gratilla Neptis nycteas Neptis sankara nar Neptis sextilla Phalanta philiberti	rnyctodes batest Salamis angustina Salamis angustina angustina Salamis angustina vinsoni Sasakia charonda

U.S.A. Madagascar [U.S.A.] U.S.A. U.S.A. U.S.A. U.S.A. U.S.A. U.S.A. U.S.A.	Madagascar Madagascar Hawaii New Zealand Hawaii Hawaii	Tasmania Tasmania Tasmania Tasmania Hawaii Austria [Hawaii] [Hawaii]	Austria, Belgium, F.R.G., Hunga Central & North Europe to Japan
L M M L L L L L M M M M M M M M M M M M	~~ + >	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ш>
Smokey Eyed Brown Butterfly Atossa Callippe Silverspot Silverspot Regal Fritillary Blue Silverspot Great Basin Silverspot Behren's Silverspot Oregon Silverspot Myrtle's Fritillary	ae: Acraeinae) Hedyleptan Moths Blue Margaronian Green Margaronian Ohenaupaka Oeobian Moth	Ioxantha Looper Moth Kona Giant Looper Moth Ko'olau Giant Looper Moth Hawaiian Hopseed Looper Moth Ola'a Peppered Looper Moth	Small Lappet Moth
Satyrodes eurydice fumosa Smerina manoro Speyeria adiaste atossa Speyeria callippe Speyeria hydaspe conquista Speyeria idalia Speyeria nokomis nokomis Speyeria zerene behrensii Speyeria zerene hippolyta Speyeria zerene myrtleae	Family Acraeidae (or Nymphalid Acraea hova Acraea sambavae Family Pyralidae Hedylepta (14 species) Kupea electilis Margaronia cyanomichla Margaronia exaula Oeoblia dryadopa	Family Geometridae Acalyphes philorites Dirce aesiodora Dirce lunaris Dirce solaris Eletcherana ioxantha Gnophos obscurata Scotorythra megalophylla Scotorythra paratactis Tritocleis microphylla	Family Lasiocampidae Eriogaster catax Phyllodesma ilicifolia

V France, Spain E Austria, Czechoslovakia, F.R.G.	E Hawaii V U.S.A. E U.S.A. V Europe & U.S.S.R. Ex? (Hawaii)		I Canada, U.S.A. Ex? [Hawaii] Ex [Hawaii] Ex [Hawaii] Ex [Hawaii] Ex [Hawaii] I U.S.A. I U.S.A. I U.S.A. Ex? [Hawaii] I U.S.A. Ex [Hawaii] I Canada, U.S.A.	I Hawaii
Spanish Moon Moth Great Peacock Moth	Kern Primrose Sphinx Moth Prairie Sphinx Moth Blackhurn's Sphinx Moth	Fabulous Green Sphinx of Kauai	Albarufan Dagger Moth Poko Noctuid Moth Midway Noctuid Moth Kerr's Noctuid Moth Laysan Noctuid Moth Marbled Underwing Moth Precious Underwing Moth Hebard's Noctuid Moth Confused Moth Minute Noctuid Moth Hilo Noctuid Moth Laysan Dropseed Noctuid Moth Lovegrass Noctuid Moth Lovegrass Noctuid Moth Lovegrass Noctuid Moth Lemmer's Noctuid Moth Ceromatic Noctuid Moth	Nihoa Eupelmus Wasp

Order HYMENOPTERA Family Eupelmidae Eupelmus nihoaensis

Peridroma porphyrea Pyreferra ceromatica

Lithophane lemmeri

Hypena plagiota Hypena senicula

Hypena neweili

Agrotis laysanensis

Agrotis photophila Agrotis procellaris Catocala marmorata

Helicoverpa confusa

Helicoverpa minuta Hydraecia petasitis

Erythroecia hebardi

Catocala pretiosa

Hypena laysanensis

Celerio wilsom perkinsi

Family Sphingidae

Euproserpinus euterpe

Euproserpinus wiesti

Family Saturniidae

Graellsia isabelae

Saturnia pyri

Proserpinus proserpina Tinostoma smaragditis

Manduca blackburni

Hyles hippophaes

Family Noctuidae

Acronicta albarufa

Agrotis crinigera

Agrotis fasciata

Agrotis kerri

I Hawaii	I U.S.A.		R Central & Southern Europe V F.R.G.			K Switzerland I Switzerland I Switzerland K Australia I F.R.G.	E Hawaii E Hawaii	E Hawaii E Hawaii E Hawaii E Hawaii
Nihoa Sclerodermus Wasp	Antioch Mutillid Wasp	Sri Lankan Relict Ant Caucasian Relict Ant	Ravoux's Slavemaker Ant	European Red Wood Ant	Red Wood Ant Black Bog Ant	Goesswald's Inquiline Ant Australian Ant	Niihau Vespid Wasp Soror Vespid Wasp	Hawaiian Sphecid Wasp Puna Sphecid Wasp Short-foot Sphecid Wasp Brown Cross Sphecid Wasp Giffard's Sphecid Wasp
Family Bethylidae Sclerodermus nihoaensis	Family Mutillidae Myrmosula pacifica	Family Formicidae Anergates atratulus Aneuretus simoni Aulacopone relicta Camponotus aethiops Camponotus dalmaticus Camponotus fallax Camponotus gallax Epiniyrma groesswaldi	Epimyrma ravouxi Formica aquilonia Formica lugubris	Formica polyctena Formica pratensis	Formica rufa Formica transkaucasica Formica uralensis	Leptothorax goesswaldi Myrmica bibikoffi Myrmica slovaca Nothomyrmecia macrops Polyergus rufescens	Family Vespidae Odynerus niihauensis Odynerus soror	Family Sphecidae Deinomimesa hawaiiensis Deinomimesa punae Ectemnius curtipes Ectemnius fulvicrus Ectemnius giffardi

Hawaii U.S.A. Hawaii Hawaii Hawaii U.S.A.	Hawaii	U.S.A. U.S.A.	Moluccas		Equatorial Tropics Southern Hemisphere Tasmania Tasmania Tasmania		North-east Atlantic North-east Atlantic, Mediterranean
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Haleakala Sphecid Wasp Bidecoratus Sphecid Wasp Redheaded Sphecid Wasp Kauai Sphecid Wasp Shade-winged Sphecid Wasp Antioch Sphecid Wasp	Yellow-faced Bee	Yellow Banded Andrenid Bee Antioch Andrenid Bee	Wallace's Giant Bee		Peripatus (10 genera) Peripatus (12 genera)	Phylum ECHINODERMATA	European Edible Sea Urchin Purple Urchin
Ectemnius haleakalae Ectemnius nesocrabo bidecoratus Eucerceris ruficeps Nesomimesa kauaiensis Nesomimesa perkins Nesomimesa sciopteryx	Family Colletidae Nesoprosopis (57 species)	Family Andrenidae Perdita hirticeps luteocincta Perdita scitula antiochensis	Family Megachilidae Chalicodoma pluto CLASS ONYCHOPHORA	Order ONYCHOPHORA	Family Peripatidae Family Peripatopsidae Dendy sp. (3 species) Euperipatoides sp.nr. leuckarti Ooperipatellus insignis	CLASS ECHINOIDA	Order ECHINOIDA Family Echinidae Echinus esculentus Paracentrotus lividus

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The Red Data Book concept, originated by Sir Peter Scott in the mid-1960s, aims to focus attention on the plight of the earth's vanishing wildlife. The concept has been outstandingly successful and, two decades later, many national, regional, and global Red Data Books have been published, with many more countries in the process of compiling their own lists of threatened species. The information provided in national and regional compilations will inevitably be more detailed than the global overviews produced by IUCN. There is, however, an increasing demand for an international list that categorises the status of globally threatened taxa, and it is to meet this demand that the IUCN Red List of Threatened Animals has been produced. This edition is an update of the original 1986 Red List, and it is proposed to publish new editions on a regular basis.

Produced from the databases of the IUCN Conservation Monitoring Centre, the Red List presents for each threatened species the scientific name, the English vernacular name, the IUCN threatened category, and a brief description of the animal's range. This is followed by an index to the list based on the order, family, and generic names, with vernacular names for major groupings. Also included is an overview of biotic extinctions prepared by Bruce Wilcox of the Center for Conservation Biology at Stanford University. A guest essay will be a regular feature of future editions.

Whilst the length of the list makes depressing reading, the information it contains is of fundamental value to animal conservationists.

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A contribution to GEMS – the Global Environment Monitoring System.









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